

**UTAH
NONPOINT SOURCE
POLLUTION MANAGEMENT PROGRAM**



Pinto Creek, Washington County

**FISCAL YEAR 2015
ANNUAL REPORT**

January 2016

**Prepared by:
The Utah Department of Environmental Quality
In cooperation with the Water Quality Task Force**



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Cover Photo: Pinto Creek restoration project. Implemented in FY-2015 using State NPS funding.

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1. Introduction and Program Overview

This report fulfills the requirements of Section 319(m)(1) of the federal Clean Water Act of 1987. The Utah Department of Environmental Quality's Division of Water Quality annually prepares this report to inform the public, the U.S. Congress and the U.S. Environmental Protection Agency (EPA) on the state's progress in the area of nonpoint source water pollution abatement. Although this report should not be considered a complete account of all nonpoint source activities, it describes the most important features of Utah's program.

The mission of the Utah Nonpoint Source Pollution Management Program is to support the environmental protection goals of the state as described in Utah Administrative Code R317-2, in part to: 1) to conserve the waters of the state; 2) to protect, maintain, and improve the quality of the waters of the state for public water supplies, species protection and propagation and for other designated uses; and 3) to provide for the prevention, abatement and control of new or existing sources of polluted runoff. The Utah NPS Management Program works to achieve these goals by working in concert with numerous local, state and federal agencies and private parties pursuant to the Utah NPS Pollution Management Plan.

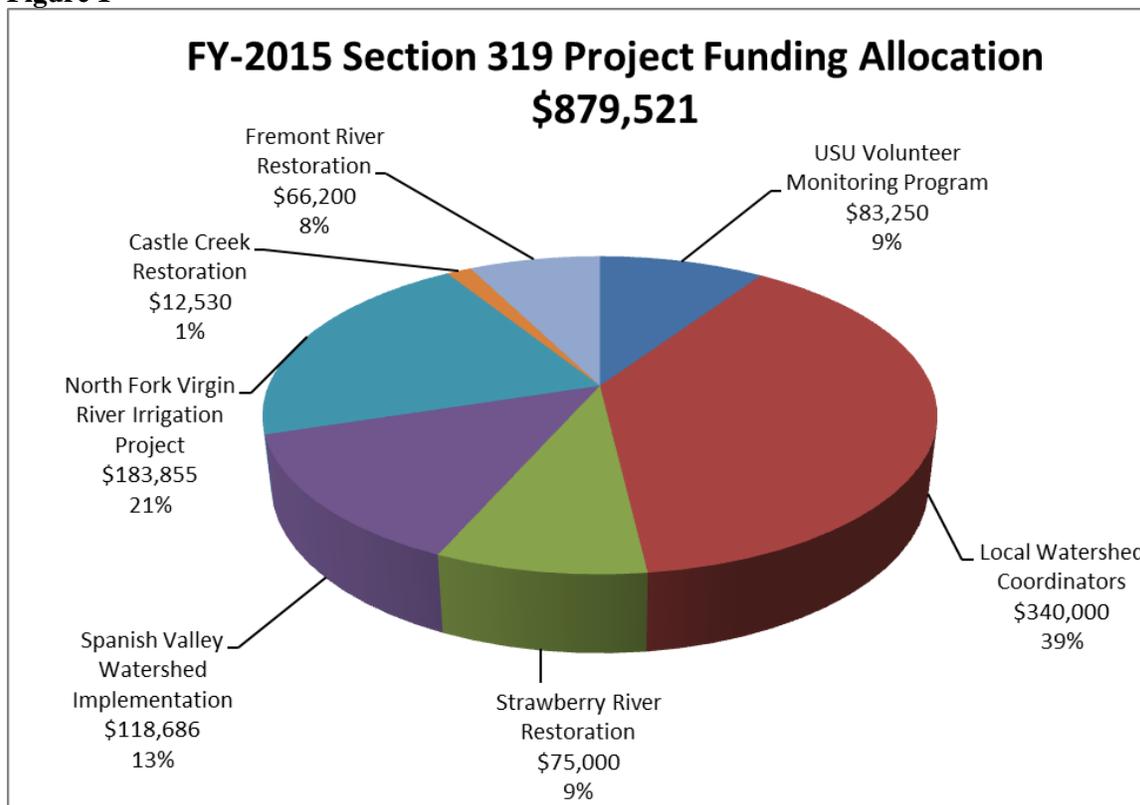
Nonpoint source pollution refers to diffuse pollutants that when added together from an entire watershed can significantly impact water quality in streams, lakes and reservoirs. Nonpoint source (NPS) pollution is diffuse, coming from land runoff, percolation, precipitation or atmospheric deposition. Precipitation washes pollutants from the air and land and into our streams, lakes, reservoirs and groundwater. Such pollutants can include sediment, nutrients, pathogens (bacteria and viruses), toxic chemicals, pesticides, oil, grease, salts and heavy metals. In Utah, our most common problems are nutrients, pathogens, metals, sediment, and salts. These pollutants alter the chemical, physical and biological integrity of the water and can impair their designated beneficial uses. Most waterbodies are listed on the State's 303(d) List of Impaired Waters because of nonpoint source pollution. Some of the common sources of NPS pollution include agricultural activities, runoff from paved surfaces, mining and timber operations, recreational activities, onsite septic systems, construction, stream/riparian habitat degradation and natural sources.

2. Grant Management and Program Administration

In Fiscal Year 2015 (FY-15) the Utah NPS program received \$1,381,900 in Federal Section 319(h) funds. Of these funds, \$502,379 was used for program related staffing and support, while the remaining \$879,521 was dedicated to 7 project grants. This was a 1% decrease from the year before, thus reducing the amount of funding dedicated for project implementation by \$14,100 in FY-2015.

Section 319(h) funds are distributed at the local level to help address water quality issues contributing to nonpoint source pollution. Recipients of these funds can include local governments, watershed groups and individual cooperators. The projects selected for funding in FY-15 include the statewide volunteer monitoring program, support of local watershed coordinators, and Best Management Practice (BMP) implementation.

Figure 1



In addition to the FY-15 Section 319 funds, Utah continues to manage five other federal 319 grant awards which have been partially or completely expended. Table 1 summarizes grant awards by year and the approximate percentage that has been expended in each grant. The FY-2010 grant has been closed out.

Table 1

Section 319(h) Nonpoint Source Funding Project Allocations				
Federal Fiscal Year	Grant Award	Expenditures in FY-2015	Total Expenditures	Percent Expended
FY-10	\$1,131,582	\$214,869	\$1,131,582	100%
FY-11	\$832,921	\$13,161	\$769,927	92%
FY-12	\$830,800	\$105,089	\$640,291	77%
FY-13	\$861,621	\$556,582	\$693,628	81%
FY-14	\$893,621	\$334,678	\$334,678	37%
FY-15	\$879,521	\$0	\$0	0%
Total	\$6,764,984	\$1,224,379	\$3,570,106	53%

2.1. Staffing and Support

In FY-15 the Division of Water Quality devoted 6.2 FTEs to the NPS Pollution Management Program that are funded 60% with 319 funds and 40% state revenue. Table 2 shows the positions and FTEs funded by the Division of Water Quality using Section 319 funds.

Table 2

PERSONNEL (# FTE's)	SALARY	FRINGE (44%)	TOTAL EXPENSES	STATE (40%)	EPA 319 (60%)
Program Coordinator (1.0)	\$64,064	\$28,188	\$92,252	\$36,901	\$55,351
Program Assistant (1.0)	\$33,869	\$26,611	\$100,800	\$40,320	\$60,480
Environmental Scientist (0.50)	32,155	14,148	46,303	18,521	27,782
Environmental Scientist (1.0)	57,691	25,384	83,075	33,230	49,845
Environmental Scientist (0.50)	30,454	13,400	43,854	17,542	26,312
Environmental Scientist (0.30)	17,307	7,615	24,922	9,969	14,953
Environmental Scientist (0.50)	28,846	12,692	41,538	16,615	24,923
Monitoring Specialist (1.0)	50,383	22,169	72,552	29,021	43,531
Two Seasonal Temps (0.50)	42,333	18,627	60,960	24,384	36,576
Watershed Section Manager (0.60)	41,856	18,417	60,273	24,109	36,164
Asst. Div. Director (0.20)	16,420	7,225	23,645	9,458	14,187
Division Director (0.10)	10,768	4,738	15,506	6,202	9,304
TOTAL 6.2 FTEs	\$426,146	\$199,213	\$665,679	\$266,272	\$399,407
SUPPORT					
Travel			\$6,400	\$2,560	\$3,840
Direct and Indirect Staff Support			\$141,656	\$56,663	\$84,994
Supplies			\$2,063	\$825	\$1,238
Monitoring			\$21,500	\$8,600	\$12,900
Total Support			\$171,619	\$68,648	\$102,972
Total Staffing and Support			\$837,298	\$334,920	\$502,379

Section 319 funds allocated to staffing and support functions are also used to pay for laboratory analysis of water samples and report preparation. Phytoplankton and macroinvertebrate samples are collected annually from selected waterbodies by DWQ monitoring staff. The analysis of these samples and annual reports are paid for in part with 319 funds, and help determine if the BMPs that are being implemented are achieving the desired environmental benefits. The direct and indirect staff support includes expenses such as phones, rent, maintenance, security, printing, books, and data processing.

2.2. FY-15 Accomplishments and Milestones

FY-15 Accomplishments

- Utah closed out the FY-09 Section 319 Grant, and all information has been entered into the Grants Reporting and Tracking System (GRTS)
- Water Quality Task Force meetings were held on August 25th, 2014, December 4th, 2014, February 12th, 2015, and June 17th, 2015.
- The annual agency coordination meeting was held on March 3rd, 2014. This meeting allowed partner agencies the opportunity to give a 15 minute presentation highlighting the NPS pollution issues their agencies are currently addressing.
- The Utah Watershed Coordinating Council (UWCC) met 3 times during FY-14 including a Fluvial Geomorphology and Stream Restoration training where Patrick Belmont from Utah State University taught a one day course on the subject. A tour was also conducted in the Bear River Watershed highlighting water quality improvement projects that had been implemented.
- Success stories have been submitted to EPA for approval highlighting the environmental benefits of NPS project work that has recently taken place on the Spring Creek Watershed in Cache Valley, the Wallsburg Watershed, and the Strawberry River Watershed.
- A Federal Consistency Review was conducted with the Division of Water Quality and the Forest Service in the Uinta-Cache National Forest on August 12th, 2015.
- The Utah Division of Water Quality and the Environmental Protection Agency participated in a project evaluation tour in the Bear River and Weber River Watersheds on August 18th through the 20th, 2015.
- The Utah Division of Water Quality and the Natural Resource Conservation Service worked together to identify three 12 Digit HUCs in the Upper Sevier and Wallsburg Watersheds in which the National Water Quality Initiative funding will be spent.
- The Water Quality Task Force Charter was update and approved by the Water Quality Task force.
- The process of updating the State NPS MOU was initiated on June 17th.
- The Echo and Rockport TMDLs were approved by EPA.
- A website was developed for the NPS program (utahcleanwater.org). This website will serve as a central location in which various agencies can publicize their NPS efforts and post educational materials focused on reducing NPS pollution.

Annual Milestones

To help the State of Utah gauge the success of the Statewide Nonpoint Source Management Program the State has developed annual milestones. These milestones are based on the five objectives of the Statewide NPS Management Program identified in the Management Plan. These objectives and milestones are as follows:

Objective 1: Environmental Protection

Annual Milestones

- Number of TMDLs completed.
- Number of TMDLs initiated during the state fiscal year.
- Number of nine element watershed based plans developed.
- Number of nine element watershed based plans initiated during the state fiscal year.
- Number of projects dedicated to the protection of threatened waterbodies identified in Utah's 303(d) list.
- Number of projects focused on groundwater protection throughout the state.

Objective 2: Improve Program Efficiency and Effectiveness through Reporting and Evaluation.

Annual Milestones

- Total number of stream miles restored (beginning 2013)
- Total estimated load reductions (P,N,TSS) in project areas (beginning 2013)
- Number of final project reports submitted (beginning 2013)
- Number of 319 grants currently open during the fiscal year
- Amount of unexpended funds in each open 319 grant
- Number of success stories submitted to EPA for approval showing the environmental benefits of completed NPS projects

Objective 3: Improve Public Participation and Understanding of NPS Issues.

Annual Milestones

- Number of participants involved in the Statewide Volunteer Monitoring Program
- Number of I&E projects implemented with Section 319 and State NPS Funding
- Updates made to the State NPS Program Website

Objective 4: Improve Data Collection and Management

Annual Milestones

- Track updates made to enhance NPS monitoring in the Division of Water Quality's annual monitoring strategy
- Number of Sampling Analysis Plans developed
- Track status and updates of Utah's AWQMS database
- Report on water quality data uploaded to the EPA WQX database

Objective 5: Improve Coordination of Governmental and Private Sectors

Annual Milestones

- Hold annual NPS Management Program coordination meetings
- Conduct annual consistency reviews with state and federal agencies
- Number of Water Quality Task Force meetings held during the fiscal year
- Amount of funding used to leverage 319 funding throughout the state. This funding can include program funding from UDAF, UDEQ, UDWR, USDA, and other state, federal, and local agencies

For a complete report of how these annual milestones were met in FY-14, refer to Table I in the appendices.

2.3. Summary of Active Utah 319(h) Grants During FY-15

For an entire summary of active Utah 319(h) projects see Tables A, B, & C in the appendices.

2.4. Watershed Based Plans/ TMDLs

Section 303(d) of the federal Clean Water Act (CWA) requires states to develop and submit for approval a list of impaired waters every two years. This is referred to as the 303(d) list. The most recent version of the 303(d) list approved by EPA for the State of Utah was issued in 2014. Waterbodies listed as impaired require additional study to determine the sources of impairment, and if appropriate, have a Total Maximum Daily Load (TMDL) determination made for the pollutant of concern. Currently the State of Utah is implementing 63 TMDLs, (See Table D and E in the appendices). Additionally, a comprehensive tracking tool for TMDLs and waterbody assessments has been provided by EPA that will assist in accurately reporting the status of completed TMDLs. The Division of Water Quality has also been working to prioritize the waterbodies listed on the 303(d) list of impaired waterbodies to determine where efforts should be focused to develop TMDLs and implement watershed plans.

2.5. Project Proposals Approved for Funding During FY- 15 Solicitation Process

Due to the high demand for 319(h) funds the State of Utah has required that entities applying for funding submit pre-proposals to the State for review. 64 NPS pre-proposals totaling nearly \$4.5 million were accepted from the middle of April to the first of June for the 2015 fiscal year. These pre-proposals were reviewed by the Utah Division of Water Quality using a project selection ranking criterion developed by the Water Quality Task Force. Once the proposals were ranked they were reviewed by a subcommittee of the Water Quality Task Force, and the final grant awards were determined. Of the proposals received, 7 projects were selected for funding with Section 319 funds. The Colorado River Watershed received the majority of project funds available, since it was the targeted basin in FY-15. However, one project was funded in the Strawberry River Watershed to help complete that project as well. The local watershed coordinators and an information and education grant to USU, including the volunteer monitoring program, were also funded (Table 3). The projects that were not selected for funding with Section 319 funds were then considered for funding with State NPS funding.

Table 3

**2015 Project Implementation Plans (PIPs) for CWA Section 319 Funding
(Prepared June 30th, 2015)**

<u>Proposal Title</u>	<u>Allocation</u>
1. USU Volunteer Monitoring and I&E	\$ 83,250
2. Local Watershed Coordinators	\$ 340,000
3. Spanish Valley Watershed Implementation	\$ 118,686
4. Strawberry River Restoration	\$ 75,000
5. North Fork Virgin River Irrigation Project	\$183,855
6. Castle Creek Restoration	\$12,530
7. Fremont River Restoration	\$66,200
Total	\$ 879,521

3. NPS Program Strategic Approach

To be eligible for funding, NPS projects must be located on a waterbody, or be tributary to a waterbody, identified on the 303(d) list of impaired waterbodies. A current watershed plan should also be in place which covers all nine elements required in an EPA approved watershed based plan. Using a targeted basin approach allows watershed planners time to develop watershed plans between funding cycles. To help facilitate the development of watershed plans and identify sources of pollutant loading, the Utah Division of Water Quality conducts annual intensive monitoring runs two years before funding is scheduled to be received by the targeted basin.

3.1. Targeted Basin Approach

The State of Utah uses a targeted basin approach to reduce nonpoint source pollution. FY-15 represents the sixth year of implementing the targeted basin approach (see Table 4). This approach allows the state to focus implementation efforts on a specific watershed and will promote effective implementation of TMDLs and watershed plans.

The Colorado River Watershed obtained the majority of the 319 funds allocated for BMP implementation, and will also receive an additional \$150,000 in State Nonpoint Source funds in FY-16 if the need is present. The majority of these funds will be used to implement projects in the Spanish Valley and surrounding areas that were identified by the Moab Area Watershed Partnership (MAWP) as identified in the watershed plan that was recently developed for this area. Several other projects were funded that are not located in the MAWP, but are located in the Colorado River basin as well.

Table 4

Basin Priority Funding Schedule											
Watershed	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2021
(1) Jordan/ Utah lake											
(2) Colorado River											
(3) Sevier, Cedar-Beaver											
(4) Bear River											
(5) Weber River											
(6) Uinta Basin											

3.2. Utah State NPS Funding

The Utah Division of Water Quality uses funds generated from interest earnings on loans awarded by the Utah Water Quality Board to address NPS issues. Individuals, businesses, private entities, associations, and government agencies are eligible to receive these grants. Much like Section 319(h) funds, all project proposals received are ranked and prioritized. The highest priority projects are those that address a critical water quality need, human health concerns, and would not be economically feasible without the grant. In FY-15, 33 projects were funded using State Nonpoint Source grants, totaling \$973,897. In addition to these projects an additional \$26,103 was reserved for on-site septic system projects that may arise during the year. For a complete summary of FY-15 funded projects see Table F in the appendices.

3.3. Program Match Status

The 319(h) federal money received by the State requires a 40% non-federal match for both the staffing and support funds used by DEQ and the dollars allocated for projects. Most of the match for projects is provided at the local level by individual producers and landowners. The DWQ provides State NPS funds as match to selected 319 projects to provide an additional incentive to implement BMPs.

There are several state and local programs which have been very helpful in generating match for the 319 projects. The Division of Wildlife Resources manages several state grant programs, which include Habitat Council funds, Blue Ribbon Fishery program, and Watershed Restoration Initiative funding. These funds are dedicated to the improvement of wildlife habitat on public and private lands, while improving water quality. Table G in the appendices gives a summary of these funds used in conjunction with Section 319 funding.

The Utah Conservation Commission manages the Agriculture Resource Development Loan Program (ARDL), which in recent years has been expanded to include water quality improvement projects on farms and ranches. The Grazing Improvement Program (GIP) at the Utah Department of Agriculture and Food also provides state revenue to improve management of upland and riparian areas throughout the state. All of the programs mentioned above have provided match for 319 revenues in jointly funded projects. These state programs are tremendous assets to the improvement of water quality in this state.

The Department of Environmental Quality provides state revenue to match the staffing and support 319(h) funds that are part of the Performance Partnership Grant (PPG). The Utah Association of Conservation Districts also tracks all match accruals through projects managed by the Local Conservation Districts via an annual contract. Table 5 shows the amount of match accrued for all open Section 319 grants.

Table 5

Grant Year	319 Funds Spent in FY-15	Match Accrued in FY-15	Total 319 Funds Spent	Total Match Accrued
FY-10	\$214,869	\$143,246	\$1,131,582	\$754,388
FY-11	\$13,161	\$8,774	\$769,927	\$513,285
FY-12	\$105,089	\$70,059	\$640,291	\$426,861
FY-13	\$556,582	\$371,055	\$693,628	\$462,419
FY-14	\$334,678	\$223,119	\$334,678	\$223,119
FY-15	\$0	\$0	\$0	\$0
Total	\$1,224,379	\$816,253	\$3,570,106	\$2,380,071

3.4. Integrating Watersheds and NPS Funding (Basin wide summary)

Watershed coordinators have proven to be very effective at helping implement water quality projects on the ground. Local watershed coordinators develop relationships with landowners and educate them on the benefits of installing Best Management Practices (BMPs). They also oversee all project planning, design, project implementation, and reporting. They help organize and facilitate meetings for local watershed groups involved in watershed planning and in the project solicitation and selection process.

Southeastern Colorado River Watershed- Arne Hultquist

Currently there's only one local watershed group in Grand and San Juan counties, the Moab Area Watershed Partnership (MAWP) and it has been in existence a little over 4 ½ years. Last fall in November 2014 the MAWP completed its first version of the Management Plan. The MAWP will probably update the Plan in 2016. The MAWP was also required to produce a Project Implementation Plan for both Spanish and Castle Valley because it received 319 funding for several projects. Both of those were completed in November of 2014.

The MAWP received funding for four new projects this year. The Utah State University Sustainability Office received funding for a rainwater harvesting project, the Moab City Wagner Street project funding was completely funded and an education/information water monitoring signage project was funded this year. There was also a small amount granted to the San Juan Conservation District to help fund a watershed management plan for the Upper Montezuma Creek Watershed. Several of the projects that were within the MAWP that were accepted in the prior State fiscal year but were not funded by the 319 program until this State fiscal year have been started. The MAWP, the Grand Conservation District and San Juan Conservation District appreciate the funding and are looking forward to submitting several very good projects next year.

The projects completed this year include the Kiosk and the Dog Waste station projects. The on the ground work on the 2013 USFS Spring Development project was completed in late June and a final report is forthcoming. The on the ground work for the Pinhook Seeding project was also completed and the report is awaiting the results of monitoring that will take place in September.

Cedar/Beaver- David Dodds

The Cedar City watershed coordinator position is relatively new and as such this year has been focused on implementing projects and acquiring funding for future projects. The North Fork Chamberlain Ranch project has seen some changes this year. A meeting was held in March with the involved agencies and it was decided that we should try the low cost alternative of a rotational grazing system before implementing a high cost irrigation system. The grazing system began June 2015 and we hope to see results by the end of the summer. Also, the North Fork Virgin River Watershed Plan was completed this year and has been submitted to EPA for final approval.

A stakeholder meeting was held for the Pinto Creek Watershed in January. Landowners and agency personnel attended and were able to collaborate on their goals. One land owner agreed to let the Utah Division of Wildlife Resources consider using his land for some fish barriers that they may construct for establishing a cutthroat fishery. Also, the Pine Valley Ranger District agreed to let the land owners use willow cuttings and 6,000 cubic yards of rock for future stream restoration projects in the Pinto Watershed.

The local watershed coordinator completed one project in the Pinto Creek Area in FY-2015. He is also managing nine other NPS related projects throughout his assigned area. In addition to the project implementation work that he is doing, he is also gathering monitoring data, and conducting various information and education related activities throughout the basin.

Jordan River Watershed- Marian Hubbard

Over the past twelve months, the Salt Lake County Watershed Planning and Restoration Program of Salt Lake County has engaged in several restoration and planning efforts, aimed towards achieving TMDL and Salt Lake County's Water Quality Stewardship Plan's goals.

Salt Lake County has continued to work on Red Butte Creek. In FY-2015 the County partnered with the University of Utah to install signage along the creek that educated the general public about storm water impacts to the system. They also installed additional stream gauges that will help monitor flow and water quality in project areas.

The Murray/Taylorville Jordan River Restoration project is located at 5200 S through 4800 S on the Jordan River. Working with partners Murray City, Taylorville City, Utah Division of Forestry Fire and State Lands and Salt Lake County Parks, Salt Lake County Watershed Planning and Restoration has begun work on restoring 3100 feet of Jordan River Bank. 24 riparian sod mats and bare root stock have been planted to date. Weed control measures including phragmites spray and cutting are slated for August and 265 trees and shrubs will be planted on September 15th. Major construction activities at the Little Cottonwood confluence area is slated for this fall.

The Emigration Creek implementation project accomplished all objectives and tasks of the project, including some extra achievements. These include:

- Regrading the slope at Rotary Park Detention Basin Pond to assist with public safety and vegetation establishment.
- Installation of a fence around the detention basin to minimize dog and human traffic to Emigration Creek.
- Riparian and upland seeding in both the spring and fall of 2014.
- Mechanical weed removal and trash removal.
- Optical brightener study and 2 caffeine studies to determine anthropogenic sources of *E. coli* in May and September 2014.
- Bioengineering along Emigration Creek at the Rotary Park Detention Basin and west of Hogle Zoo.
- Stakeholder and Public Meetings.
- Water Quality Monitoring as well as photo monitoring.

Bingham Creek: In cooperation with the UACD, watershed personnel will design and install soil bioengineering strategies and wetland plants to reduce sediment loading and *E. coli* contamination in Bingham Creek and subsequently, the Jordan River. UACD will install fencing and manure management strategies to keep cattle from adversely affecting this area. Once the fence is complete and the manure management has been established by the UACD, Salt Lake County will then design and install the bioengineering.

Jordan River Channel Repair at Winchester St.: In cooperation with the State of Utah Division of Forestry, Fire and State Lands and Murray City, watershed personnel have designed and installed a design focused on Natural Channel Design concepts and re-contoured the Jordan River channel. This includes four rock cross vanes to drop the river the necessary 10 feet. Design work began summer 2015 with construction activities concluding in mid-September. All plantings including 1000+ container plants and over 2500 live stakes will be installed in Fall 2015.

In addition to the project implementation that is taking place, the watershed coordinator continues to fulfill their reporting responsibilities, as well as the information and education component of

the watershed. This included the Jordan River Symposium, a water quality newsletter, and a river clean-up day in the watershed when trash is collected.

Weber River Watershed- Jake Powell/Andy Pappas

In FY-2015 a new local watershed coordinator was hired. This coordinator is learning quickly, and has already begun identifying projects that need to be implemented within his watershed. Currently the local watershed coordinator is working with landowners to implement five projects. These projects focus on protecting the riparian area by fencing animals from the stream corridor and stabilizing eroding banks, thus allowing the vegetation to reestablish along the reach. In addition to the implementation of these projects, the watershed coordinator has also been tasked with monitoring these projects.

The watershed coordinator continues to work closely with the East Canyon Watershed Committee. This committee is currently working to develop an outreach and education campaign focused on increasing awareness about the low flow issues in East Canyon Creek. The coordinator also acts as the website administrator and frequently develops new content for the website and keeps current events and information up to date. He has also been heavily involved with the Weber River Partnership. This group seeks to act in the capacity of a watershed committee working to increase the coordination and effectiveness of groups working in the larger Weber Watershed.

The local watershed coordinator continues to develop the CRMP for the South Fork of Chalk Creek. This watershed was identified as a high priority area in the Echo/Rockport TMDL because of its high contributions of sediment to the larger Chalk Creek watershed. A final draft of this document has been submitted to the Division of Water Quality. This planning process has raised awareness among the landowners of watershed scale issues as well as provided a foundation of partnership, collaboration, and planning within the watershed.

The watershed coordinator continues to participate in and lead the way for water quality education within the watershed.

Middle and Lower Bear River Watershed- Justin Elsner

During FY-15 the local watershed coordinator completed 4 projects to help improve water quality in the watershed. These projects consisted of a stream bank stabilization project and three animal feeding operations. In addition to completing these projects, the local watershed coordinator continues to work on 7 other projects that are scheduled to be completed in the next couple of years.

In addition to project implementation, the local watershed coordinator has been actively involved in educating the general public in his watershed. The local watershed coordinator continues to facilitate two different watershed groups in the Middle and Lower Bear River Watersheds. The Cutler Reservoir Advisory Committee is active in the Middle Bear River Watershed, and is currently developing the implementation plan for the Cutler Reservoir TMDL. The watershed group in the Lower Bear River has recently begun the process of revising the TMDL on the Lower Bear River.

The local watershed coordinator has also developed several final reports as funding has been spent out, and grants completed. The local watershed coordinator had a large amount of funding that needed to be spent on water quality projects and was able to identify projects that could be

used for that funding, and has submitted adequate reports showing how this funding has been spent.

San Pitch Watershed- Alan Saltzman

During FY-2015 one project was completed in the San Pitch Watershed, and the local watershed coordinator continued to work with two other land owners that were implementing projects. However, as the targeted basin for FY-2016 the local watershed coordinator focused mainly on applying for funding and doing the planning for several projects that are projected to take place in the San Pitch Watershed over the next 3 years. In FY-2016 six projects will be funded using State NPS grants totaling \$271,397. Six additional projects will also be funded using Section 319 funding totaling \$196,326. These projects will begin to be implemented as early as the fall of 2016.

In addition to project implementation the San Pitch Watershed Coordinator has been helping the local Conservation District develop a coordinated resource management plan that will encompass all 9 of the EPA required watershed planning elements. He also continues to assist with the collection of water quality data that will be used in the development of this plan. He has also been involved with the monitoring of projects that have been implemented in his watershed to show project effectiveness. The watershed coordinator has completed all of his reporting requirements for his project funds, and has submitted his reports in a timely manner

The watershed coordinator has continued to conduct information and education related projects throughout the watershed. This includes a watershed field day that was held on April 30th at Snow College. All of the local 4th grade classes in the district attended this field day.

Upper Sevier Watershed- Wally Dodds

FY-2015 was a busy year in the Upper Sevier River. In addition to the coordinators' normal duties, he has also been called over to the Fremont River to help implement a restoration project since the previous project manager had retired. The local watershed coordinator helped complete the South Canyon Pinion/Juniper removal and reseeding in FY-2015, and in addition to that project he continues to work on 9 other projects that will be completed in the next couple of years. Since two HUC 12 watersheds in the Upper Sevier were selected for NWQI projects from the NRCS totaling over \$300,000 the watershed coordinator has been busy working to do the conservation planning involved for those projects. Two nationwide applications are in place, and as soon as these are issued they will start construction on two of the four projects that were funded with NWQI this year.

In addition to the project work that is currently being planned, the watershed coordinator has been working on updating the watershed plan for the Upper Sevier Watershed. It is anticipated that this plan will be completed before the targeted basin funding is received in the spring of 2016.

The local watershed coordinator is also heavily involved in water quality information and education activities. This includes a natural resource field day that is held annually in the watershed. This allows students from local schools to learn about water quality issues in their watershed, and they get the opportunity to go out and help plant willows along the Sevier River near Panguitch.

Project Summary

In 2015 local watershed coordinators were involved with the completion of 8 projects throughout the State of Utah. These projects used \$246,097 in Section 319 funds and generated over \$858,884 of funding from other sources. These projects are estimated to result in a reduction of 1,479.8 pounds of phosphorous and 243.9 tons of sediment per year. In addition to the projects that have been completed, additional funding is also being spent on projects that are scheduled to be completed in the next fiscal year. Table 6 shows a summary of the projects that were completed in each watershed.

Table 6

Watershed	Number of Projects Completed	319 Funding	Funding from Other Agencies	Estimated Total P Load Reductions (lbs/year)	Estimated Sediment Load Reductions (tons/year)
Weber River	1	\$143,935	\$85,314	44.1	81.5
Cedar/Beaver	1	\$0	\$58,570	60.5	45.5
Bear River	10	\$70,529	\$0	382	3
San Pitch	1	\$31,633	\$15,000	350	39.6
Upper Sevier	1	\$0	\$700,000	643.2	74.3
Total	8	\$246,097	\$858,884	1,479.8	243.9

3.5. NPS Water Quality Task Force

The mission of the Utah Water Quality Task Force is to facilitate coordinated and holistic management of Utah's watersheds for the protection and restoration of Utah's surface and ground waters.

The Utah Nonpoint Source (NPS) Program is administered by the Division of Water Quality (DWQ) of the Utah Department of Environmental Quality (DEQ) through the coordination and assistance of the Utah Water Quality Task Force, and its established ad hoc committees. The responsibility of the Utah Water Quality Task Force is to advise the DEQ in the holistic management of Utah's watersheds, with a focus on reduction of nonpoint source pollution. DEQ is responsible for the chairmanship of the Water Quality Task Force.

Specific functions of the Utah Water Quality Task Force include:

- Serve as a coordinating body for the review and direction of federal, state and local NPS management programs to assure that these programs are implemented consistent with the Utah Nonpoint Source Management Plan (approved by EPA in 2013 and as amended or revised);
- Promote and foster better alignment of relevant programs to assure efficient and effective watershed management efforts that improve water quality, in addition to other benefits;
- Provide a forum for the exchange of information on activities which reduce nonpoint source pollution;
- Provide a forum for discussing and implementing project monitoring (before and after)

- Provide a common storage area for all data collected
- Provide a forum for discussion and recommended resolutions to program conflicts;
- Work with partner agencies to coordinate the prioritization of watersheds for nonpoint source activities. Prioritization criteria should include local involvement (e.g. locally led watershed committees), effective use of partnerships, and evidence of leveraged sources of funding;
- Establish and implement a process for field inspections of nonpoint source mitigation activities on public and private lands to ensure that best management practices are installed and functioning as designed to protect water quality; and
- Serve as a coordinating body for outreach and education to increase public awareness regarding nonpoint source pollution management.

Specific Products of the Utah Water Quality Task Force include:

- The Annual Utah Nonpoint Source Program Report. This report is required by EPA, but is not restricted to 319 funded efforts. The report is prepared by DEQ in coordination with UDAF. The task force will assist in providing content, advice and review. The report will highlight the planning efforts, projects, and successes statewide that are possible with the broad coalition of partners encompassed in the Water Quality Task Force;
- Presentation of the Annual Utah Nonpoint Source Program Report each year to the Utah Water Quality Board and the Utah Conservation Commission.
- Organize a NPS Conference periodically to share information, highlight successes, and improve networking throughout the state and region.
- Provide annual water quality awards to individuals and organizations whose actions or products have protected water quality and exemplified good stewardship of our waters.
- An institutional repository (e.g. a web site) that includes originals or links to documents, reports, and minutes.

Membership:

The Task Force includes representation of those entities with programs that could potentially cause or mitigate nonpoint source water pollution. As new NPS program components are developed and implemented, additional entities will be invited to participate. Current membership includes representatives of:

Local Governments
U.S. Army Corps of Engineers, Planning Division
U.S. Department of Interior Bureau of Land Management
U.S. Department of Interior Bureau of Reclamation
U.S. Department of Interior National Park Service
U.S. Department of Agriculture Forest Service
U.S. Department of Agriculture Natural Resources Conservation Service
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Geological Survey
Utah Association of Conservation Districts
Utah Department of Agriculture and Food
Utah Department of Environmental Quality

Utah Department of Natural Resources
Utah Department of Transportation
Utah Farm Bureau,
Utah State University Cooperative Extension
School and Institutional Trust Lands Administration
League of Cities and Towns
Farmers Union
Utah Association of Counties

3.6. Grants Reporting and Tracking System

The Section 319(h) Grant Reporting and Tracking System (GRTS) is a national database developed by EPA to track projects and activities funded with CWA Section 319(h) funds. The primary purpose of the database is to track project progress, accomplishments, funding information and environmental results using several nationally mandated information items that are reported to Congress annually by EPA. Information extracted from this system forms part of the justification to Congress for funding the Section 319 Program. EPA Region VIII uses GRTS to enable the States to electronically fulfill reporting requirements using the Project Evaluation Form and other attachment features in GRTS such as final reports, GIS maps or other project publications.

4. Water Quality Information

4.1. Sampling and Assessment Activities- Jim Harris

As more restoration projects are being implemented around the state, monitoring of individual projects is becoming more difficult to perform. The majority of 319 projects in Utah address impacts to stream and riparian habitats in order to restore aquatic life beneficial uses. Often, these projects substantially reduce erosion and inputs of nutrients to streams and rivers, in addition to improving the localized conditions of aquatic habitats. Unless restoration is widespread and inclusive of a large portion of a watershed, it is often difficult to document improvements in ambient water quality trends given the resources available. The DWQ's monitoring strategy identifies a couple of key changes in the approach to assessing the effectiveness of nonpoint source projects.

The first of these monitoring approaches involves the direct measure of the aquatic communities affected by restoration utilizing UCASE protocols in a BACI (Before-After-Control-Impact) approach. DWQ staff have already performed UCASE monitoring at sites where restoration projects are planned and linking them to sites of similar condition not anticipating management or restoration changes (Before-Control). In coming years, those same sites will be visited again to assess the changes from restoration activities (After-Impact). The BACI design provides statistically rigorous comparisons between the control site(s) with the restored site (impact) to quantify changes in biological and physical parameters that have occurred since the restoration was conducted. In reality, grab samples of chemistry are sufficiently variable that even statistically rigorous approaches like BACI may not demonstrate discrete changes in the chemical composition of surface waters following restoration activities. However, similar analyses will be conducted for measures of biological composition, which may help demonstrate relatively rapid improvements that result from remediation activities. Measures of biological composition are also useful because they directly measure improvements of the biological designated uses the numeric criteria are intended to protect. Of course, measures of both biological and chemical improvements will be dependent on the relative size of the watershed and restoration activity.

In FY 2015, the majority of the biological monitoring occurred as part of the Probabilistic Surveys performed in the Jordan River/Utah Lake Basin and as a result there were few sites targeted specifically for the evaluation of nonpoint source projects utilizing UCASE protocols. However, the focus of the Targeted Monitoring Program which collects primarily water chemistry data was centered on the Bear River watershed as well as the Weber River beginning in October 2015. These sites were targeted with several objectives in mind: supplying data for assessment and listing, Total Maximum Daily Load analysis, permitting and compliance and nonpoint source assessment. As such, many of these sites may fulfill more than one of these objectives and to create an efficient annual monitoring plan the monitoring section consults with Water Quality Management and Watershed Protection staff to identify particular assessment and evaluation needs to meet their program objectives.

Another proposed improvement to monitoring nonpoint source projects on a watershed or sub-watershed scale is the installation of long-term continuous monitoring stations. Depending on the parameters of concern and the nature of restoration activities, these automated stations could measure a variety of constituents, including dissolved oxygen, specific conductivity, pH, turbidity and discharge. Since these probes collect a limited set of water quality parameters, surrogate measures may be used and additional water chemistry monitoring implemented to develop relationships between parameters of concern and the surrogate measures. For instance, positive relationships may be developed between continuous turbidity data and chemistry data such as nutrients to provide the necessary linkage between changes at long-term stations and project effectiveness. While the installation of long-term stations isn't feasible for the assessment of individual projects on a small scale, they could be used to document the effects of a number of projects implemented as part of a watershed-scale implementation strategy as in the case of irrigation efficiency projects to reduce TDS or range improvements to reduce TSS (turbidity).

Currently, Sandy Wingert is implementing a long-term monitoring project in the Strawberry River Basin in conjunction with Division of Wildlife Resources and the Forest Service. This project seeks to evaluate the relationship between phosphorus and other measures such as turbidity to generate data sets sufficient in size to perform trend analysis. In this way, watershed improvements due to restoration activities may be discernable over time. In 2012, DWQ negotiated a Monitoring Initiative Grant to benchmark similar long term station projects which will lead up to a small scale pilot project in a NPS restoration targeted basin (TBD) . DWQ staff are currently evaluating field methods for deployment of water quality stations as well as developing assessment methods for the evaluation of continuous data against water quality criteria.

4.2 Data Analysis and Assessment

Data analysis for evaluating the effectiveness of nonpoint source projects will vary depending on the type of project and the available data sources. Biological monitoring will provide background condition of the biotic community for both the "Before" and "Control" collection events. Once implemented, projects will be assessed by revisiting the "Control" and "Impact" site. Data will be compared using similar tools described in the biological monitoring component of the probabilistic and targeted assessments. Scores of biological condition can be evaluated for the "Impact" or restoration site (Before vs. After) in conjunction with the "Control" site not receiving treatment (Before vs. After). In this way, changes in the biological condition can be evaluated against year-to-year variability.

Methods for long-term trend analysis have yet to be developed. However, these sites will likely utilize a combination of continuous monitoring data coupled with water chemistry to establish a relationship between the surrogate measures and chemical parameters of concerns linked to PIPs and TMDLs. For example, correlations can be readily established between total dissolved solids collected by grab samples and specific conductance as measured by probe sensors. Continuous monitoring datasets are sufficiently large enough to perform trend analysis with a level of confidence not possible through periodic grab sampling. Developing correlations between probe data and other parameters such as nutrients and sediment prove more difficult than the above described scenario. In these cases, measures for dissolved oxygen, turbidity or other surrogates may need to be evaluated. As mentioned above, specific monitoring plans will be developed individually for implementation strategies and QAPPs and subsequent reporting documentation will detail specific data analysis for each project.

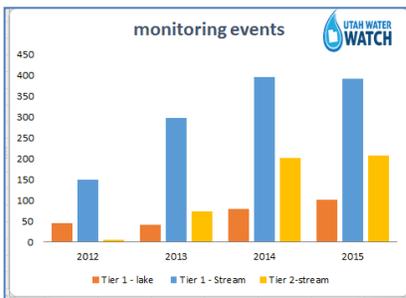
Since much of the work performed during FY2010 was part of the new Strategic Monitoring Plan, TMDL and NPS staff have not had the opportunity to evaluate or analyze these initial datasets. Results of these analyses will likely be published on a watershed basis as these analyses become available.

4.3 Volunteer Monitoring

Nancy Mesner (USU Water Quality Extension Educator)

Utah Water Watch Citizen Monitoring

In 2015, the Utah Water Watch (UWW) program continued to expand its reach, but also began to focus on data presentation and interpretation. The UWW website (<https://extension.usu.edu/utahwaterwatch>) contains information about the program and protocols, but also maps and graphs of volunteer collected data with easy to understand interpretation, our newsletters, videos and other social media links, access to UWW’s online database, and more.

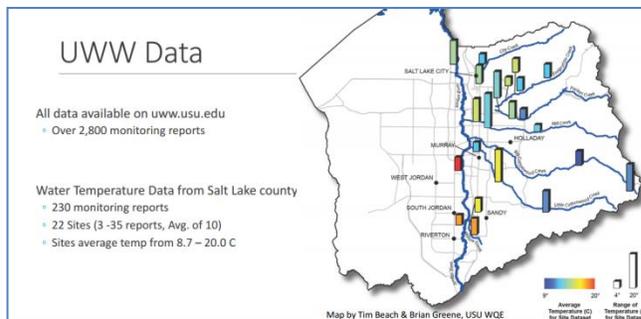


UWW volunteers collect stream and lake data for different purposes. Tier 1 (entry level) volunteers monitor primarily for educational purposes. Monitoring protocols are simple and designed for easy interpretation in the field. Tier 2 volunteers receive additional training on discharge measurements, sample collection and handling, and more. They work with watershed coordinators and other professionals to collect data that can be used for decision making and research purposes.

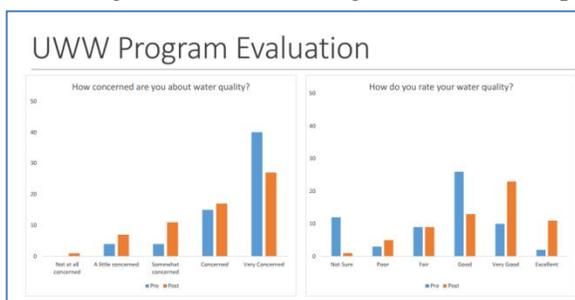
A total of 110 new volunteers joined the program in 2015, resulting in a total of 980 participants. Tier 1 volunteers sampled 34 lakes and reservoir sites and 120 stream sites throughout the state. Tier 2 volunteers assisted in higher level monitoring at 2 reservoirs and 46 streams or rivers.

UWW continues to participate in “big day” events such as Monitor Utah, part of Utah’s Water Week. UWW volunteers collected data to provide a snapshot of Utah’s water quality. The data were all mapped and are available on UWW’s website.

As UWW's datasets increase, they have begun to develop interpretive maps and graphics to help citizens better understand their results. In coordination with a statewide NSF project, UWW has also completed a set of interpretive signs about stream water quality and citizen monitoring, installed along the Provo and Logan Rivers and Red Butte Creek. Additional signs are planned for next year.



This year, UWW conducted a survey of all their volunteers to assess the value of the program after 3 years. Among other results, the survey found that volunteers have a better understanding of the purpose of water monitoring and of the organizations who conduct monitoring. They also have a greater understanding of the scientific process. Interestingly, as volunteers learn more



about their local waters, they understand that most of our water is actually in good shape. This positive message is reflected in the high percentage of volunteers who have become more active stewards of their waterbodies as a result of joining. Results of the survey were presented to the Utah Water Board, at the Salt Lake County Watershed Symposium and are available on the UWW website.

4.4 The Ambient Water Quality Monitoring System (AWQMS) Database

The Ambient Water Quality Data Management System (AWQMS) is currently undergoing an update to the current version 4.0 and is targeted to be completed in January of 2016. The new version will bring a wide range of quality control features that can be incorporated into our current data review process along with a more user-friendly format and bug fixes.

The UDWQ data review, data validation and verification process has continued to be streamlined during this year and continues to be a work in progress. During the past year, river and stream data collected during 2014 was imported and is currently available online. The 2015 data is currently undergoing data review and will be imported into AWQMS early next year after the database update has been completed. Data collected for lakes and reservoirs during 2009 has been imported into AWQMS and the overlap between migrated data has been resolved for this data set. Lakes and reservoirs data for 2010-2014 has undergone data review and is currently being imported into AWQMS.

UDWQ has partnered with EPA to establish a data flow to the EPA STORET Data warehouse utilizing the WQX schema. Efforts will include reduction of duplicated data caused during data migration from STORET to AWQMS and developing import configurations for other types of data such as bacteriological, and biological data.

In an effort to improve data quality, data migration issues are currently being reviewed and prioritized. Other data cleanup efforts that were identified during data review will also be prioritized and addressed after the database update has been completed. The new version of AWQMS will allow data corrections to be implemented across records and will streamline data cleanup efforts.

4.5 Ground Water Protection

Ground water protection remains a priority in the State of Utah. In the past, various projects were funded using 319(h) funds to help analyze ground water around the state. Recently the State has noticed an increase in nutrients in various ground water sources. This monitoring will help assess the problem, and identify the sources of the contaminants. The Utah Division of Water Quality and the Division of Drinking Water will continue to fund monitoring and information and education programs around the state to identify groundwater issues, and educate the public on what they can do to protect groundwater in the State. The Utah Division of Drinking Water (UDDW) completed a grant which generated a groundwater model that used water quality data that had been gathered from wells in northern Utah and compared it to the land uses in those areas. The model was able to generate maps showing where the areas of concern are for ground water contamination, specifically nutrients. UDDW contracted with Utah State University to do an informational campaign educating landowners on what they can do to help protect groundwater in their area. However, the local agencies decided that no educational campaign should be done so as not to worry the residents about the quality of their drinking water. Most of the elevated nitrate concentrations were found in water wells used for irrigation only and not for drinking water.

Additionally, several grants have been given to Utah State University to help educate septic owners on how they can properly maintain their septic systems to reduce pollutants from entering into groundwater. Technical service providers that commonly install and maintain those systems are also being trained on how to properly install and pump these systems.

5 Outreach Activities

Utah State University Extension- Nancy Mesner (USU Water Quality Extension Specialist)

Outreach Activities

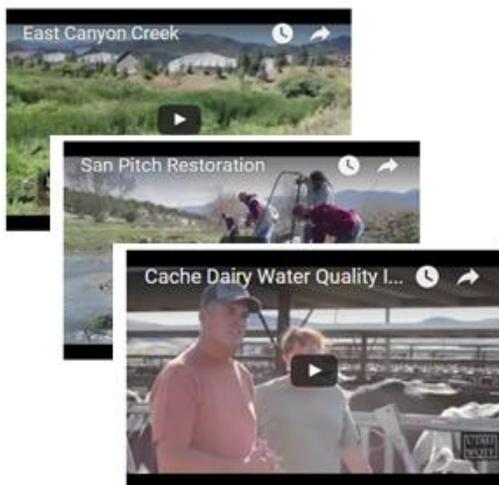
In 2015, USU Water Quality Extension (USU WQE) delivered a wide range of outreach and education activities targeted to different audiences, but all with the goal of increasing awareness of the protecting Utah's water from nonpoint source pollution. They leveraged their 319 funding with grants and support from NSF, USDA, USU and Americorps to greatly expand their capacity. Below are highlights of several of USU WQE's programs.

Support for Utah's Water Quality Task Force:

In 2015, the Utah State Water Quality Task Force I&E subcommittee identified several high priority needs: to improve coordination of outreach efforts between the different partners in the state and to more effectively highlight our successes. In response to the subcommittee's input, USU WQE developed a new website to highlight NPS water quality efforts and successes within the state (www.utahcleanwater.org).



The site explains Utah's NPS program, highlighting successes and watershed specific contacts, project information, data and reports.



USU WQE also produced 6 short (~ 1 minute) videos about specific watershed projects throughout the state. These were completed at the end of 2015 and are available on the website. They will also be “packaged” on flash drives and given to legislators, agency administrators and other decision makers so they can hear from their own constituents about the effectiveness and efficiency of Utah’s NPS programs.

USU WQ Extension also assists Utah’s watershed coordinators through training, assistance in monitoring, and development of watershed specific factsheets. WQE organized a workshop on sediment for our watershed coordinators. Dr. Patrick Belmont guided the group through techniques in quantifying

sediment, understanding sediment sources and fates, and using these tools in TMDL development and implementation.

Youth outreach and teacher training:

Utah State University’s water education program continues to reach youth across the state. In 2015 they provided hands-on water quality activities for over 8,000 youth and parents at camps, water fairs, competitions, and other



events. In total, they assisted with or organized 35 different youth or family events in 10 counties.



They also continued to provide training for teachers and informal educators on water quality related, hands-on lessons. Working with the Utah Office of Education and

Utah’s Stem Education advisor, they re-designed their Stream Side Science website (<https://streamsidescience.usu.edu>) to provide more content, easier access to materials, and easier ways for teachers and others to sort through the material by age, interest, or core curriculum requirements.

With other funding, USU WQE piloted a new model for teacher education, which involves a total of 4 different workshops with teachers throughout the school year. This expanded version of our existing training provided teachers with more time to work collaboratively with other teachers at their schools, to tailor activities for their own needs and to receive feedback. The program was also designed to introduce families to Extension’s education centers (e.g. USU Botanical Center, Swaner EcoCenter and Thanksgiving Point) where water related programming helped enhance the training and learning for the students.

Teacher comments about Make a Splash in Utah:

"An overall fantastic course where I felt supported and encouraged in providing students with water resources education";

"The impact on my students from this project is exceptional".

"The activities from this workshop will leave a huge impact on my students"

"I was able to apply this material to different parts of the Core."



Nutrient Management Education- Rhonda Miller

Activities have focused on educating producers about the new Concentrated Animal Feeding Operation (CAFO) regulations. Eight workshops for Animal Feeding Operations (AFOs) and CAFOs were held in January and February, 2015. These workshops covered the latest developments in the AFO/CAFO regulations, and the options available to producers. Information on nutrient management plans (NMPs), record keeping, and other regulations affecting producers were presented. A Producer's Website, which provides "one-stop" shopping for the producers, is being maintained and expanded. This website provides information, in laymen's terms, on the regulations producers are likely to encounter.

State/Local Agency Contributions

1) Utah Conservation Districts/Utah Association of Conservation Districts

Utah Conservation Districts have statutory authority for the prevention of nonpoint source pollution (Utah Code 17D-3). They provide local leadership to identify resource needs and assist private property owners and managers in obtaining the resources to address those needs. The Districts and UACD partner with the Utah Division of Water Quality to implement Section 319 projects throughout Utah.

Assistance available through Utah Conservation Districts includes conservation planning, engineering, and GIS/GPS services. Further, Districts promote and fund educational activities for children including the Utah Envirothon, fairs, field days, and in-classroom presentations.

UACD has contracted with the Utah Division of Water Quality for agricultural NPS management contract tracking and administration. The state-level administration is accomplished through member conservation districts that contract NPS program funding for best management practices with district cooperators. UACD administers the cost-sharing grants by making payments to landowners implementing projects.

2) Utah Division of Natural Resources- Alan Clark

The Watershed Program in the Department of Natural Resources focuses on protecting and enhancing core values for our present and future quality of life including watershed health (structure and function), water quality and yield, wildlife populations, and sustainable agriculture.

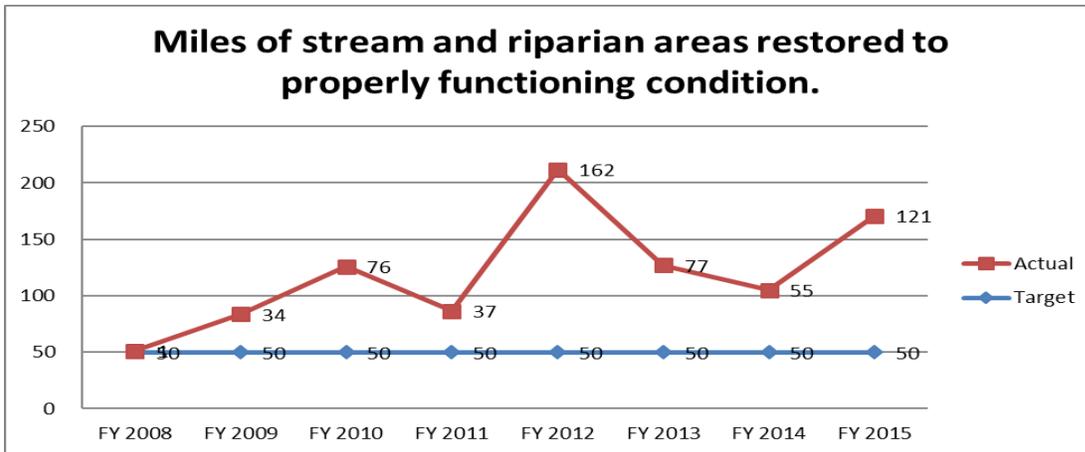
This is accomplished through the Utah Watershed Restoration Initiative (WRI), a diverse partnership of state and federal agencies working together with non-governmental organizations,

industry, local elected officials and stakeholders, coordinated by the Utah Department of Natural Resources. Locally led teams identify conservation issues and focus areas using existing plans to address needs at the landscape (watershed) level. Program partners then propose projects to address these needs and receive input from other partners. Projects are reviewed and ranked by the regional teams using a standardized scoring system and then are funded from a variety of sources and contributors.

In fiscal year 2015, the WRI partnership (122 partners participating) completed over 110 projects restoring 93,000 acres of uplands and 121 miles of stream and riparian areas (see table 7). Many of these projects are designed with the goal of improving water quality and quantity. The Watershed Program finished a complete revision of our online geodata base that was launched in December. For a full list of WRI projects completed go to: watershed.utah.gov. Through the partnership effort, general funding (\$1.95 million) to the Watershed Program from the Legislature was successfully leveraged at over 8 to 1 in on-the-ground projects.

The long-term results from this effort will be reduced acres burned by wildfires and resulting suppression costs, reduced soil loss from erosion, reduced sedimentation and storage loss in reservoirs, improved water quality and yield, improved wildlife populations, reduced risk of additional federal listing of species under the Endangered Species Act, improved agricultural production, and resistance to invasive plant species.

Table 7



3) Utah Department of Agriculture and Food- R.J. Spencer

The Utah Department of Agriculture and Food regularly collaborates with state and federal partners to assist agricultural producers to maintain viable and productive agricultural lands and to protect Utah’s natural resources. A strong partnership provides technical and financial resource options to Utah’s agriculture producer while promoting agricultural sustainability. A watershed approach is used to work cooperatively with private land owners to prepare conservation plans that will solve resource problems. Funding options are available from multiple state and federal programs. This year the Utah Department of Agriculture and Food partnered with the Division of Water Quality to monitor selected head waters in the state for nutrients. Funding was acquired to purchase monitoring equipment which consisted of a flow meter, Multi-parameter meter, and eight data sondes. UDAF hired two seasonal employees to help the two dedicated staff from the Division with this project. Monitoring consisted of a selection of sites being visited once a month, from June thru September, on average there where

8-10 sites visited each week throughout the state. The monitoring sondes were deployed at least once during the summer at all sites to collect real time data for at least a week. The data collected from this partnership will help provide needed information on how much and where excess nutrients are a concern in our state's headwaters. Once that is determined the state will move forward with a plan to address areas of concern. UDAF plans on continuing to monitor projects affecting agriculture in the future to provide information to both producers and the public on what has been achieved by implementing best management projects.

Utah Conservation Commission (UCC)

The UCC is authorized under [Title 4, Chapter 18 of the Utah Code](#). The Act's purpose declaration states that "The Legislature finds and declares that the soil and water resources of this state constitute one of its basic assets and that the preservation of these resources requires planning and programs to ensure the development and utilization of these resources and to protect them from the adverse effects of wind and water erosion, sediment, and sediment related pollutants." With this in mind, the Legislature created in 1937 this unique state government entity and it has been active continually since, evolving to meet new environmental and social conditions. Today this [16 person board](#) strives to protect the natural resources within the state.

Utah Agriculture Certificate of Environmental Stewardship (ACES)

The ACES program assesses storage, handling and application of fertilizer, pesticides, fuels, and hazardous wastes. It also assesses grazing management, soil erosion, cropping and irrigation systems, storage and application of manure, and other agricultural practices that may cause an impact on our natural resources.

The ACES workbook has been written by UDAF and reviewed by agriculture producer groups, environmental groups, and some State and Federal agencies. Comments have been very favorable and incorporated into the final version of the workbook. The UCC approved the final version of the workbook on September 15, 2014 and the program is now ready to start certifying agriculture producers, this will be a milestone in moving conservation forward and protecting our natural resources. Currently one operation is moving forward in the certification process.

Utah Grazing Improvement Program (UGIP)

The Utah Grazing Improvement Program is a broad-based program focused on rangeland resource health. Its mission is to "improve the productivity, health and sustainability of our rangelands and watersheds." A keystone benefit is the reduction of NPS water pollution and the protection and improvement of water quality and habitat components.

A staff of Grazing Coordinators, located in six regions throughout the state, offers the livestock industry sound information and assistance regarding grazing issues. A main focus of the program is to invest in and help facilitate improved resource management. Grants are provided for projects that will enhance grazing management and rangeland resource health.

Agriculture Resource Development Loan Program (ARDL)

Projects eligible for ARDL loans include animal waste management, water usage management (irrigation systems), rangeland improvement, on farm energy projects, wind erosion control, disaster mitigation and cleanup, water conveyance projects for both private individuals and canal companies, and providing crop storage facilities and other farm structures outlined in the ARDL

Policy. These projects all have a direct impact on protecting our natural resources, preventing or reducing pollution both to water and air and in sustaining the economic viability of rural communities.

The ARDL section also underwrites loans for the State Revolving Fund (SRF) under the Division of Water Quality financing projects that eliminate or reduce nonpoint source water pollution on privately owned lands. That program was recently expanded to include grants as well as loans. We also underwrite loans for the replacement of Petroleum Storage Tanks for the Department of Environmental Quality. This program is designed to assist owners and operators in rural Utah by upgrading, replacing, or closing existing underground tanks to comply with Federal regulations and to protect the environment.

Colorado River Basin Salinity Control Program

The State of Utah currently receives approximately \$2 million yearly from the Colorado River Basin States Salinity Control Forum to reduce salt that enters the Colorado River, which has increased significantly from the initial \$350,000 received in 1997. Most recently the funds have been used to pipe irrigation canals in Daggett and Duchesne counties.

The irrigation projects installed through the salinity program are an economic benefit to agriculture in eastern Utah. The new irrigation systems increase watering efficiency, decrease water loss through seepage, and improve crop production and uniformity

Agriculture Sustainability Task Force

To better understand and address the role that agriculture plays in promoting Utah's security, economy, society, culture, and well-being, a Utah Agriculture Sustainability Task Force gathered and analyzed data and information to make recommendations to promote the sustainability of all types of agriculture. Eight major issues emerged:

1. Food Security
2. Invasive Species
3. Grazing Management
4. Immigration
5. Urban Agriculture
6. Agriculture Promotion and Profitability
7. Next Generation Farms
8. Irrigation Infrastructure

In order to address these issues, the Task Force developed a list of proposed actions which can be found at <http://ag.utah.gov/conservation-environmental.html> that state, local and federal governments and the private sector can implement. Ag sustainability and protection of natural resources go hand-in-hand.

Resource Assessments

Utah's local Conservation Districts are working in each County to prepare a county-wide resource assessment to identify local resource concerns. In preparation for that effort, each county has prepared a list of priority resource concerns identified by the local work group, and has submitted those to UDAF. Subsequently, UDAF has prepared a Statewide Resource Assessment which identifies all County priorities. The Resource Assessments will be one tool used to fund priority projects.

Information and Education

UDAF is willing to provide assistance to Utah agricultural groups, and fairly represent agricultural interests at the many committee meetings staff are involved with. Some of those committees include:

Utah Conservation Commission
Utah Association of Conservation Districts
Local Conservation Districts
Utah Water Quality Task Force
Utah Nutrient Core Team
Utah Animal Feed Operation Committee
Local Watershed Committees

UDAF works closely with Utah Legislators to make sure that agriculture is fairly considered in any legislation that is considered. We also maintain an up-to-date website (www.ag.utah.gov) that provides information to agriculture producers and the public.

4) Forestry, Fire and State Lands- Bill Zanotti

The Division of Forestry, Fire and State Lands monitor timber harvesting on private and state lands within the State of Utah for the Department of Environmental Quality-Division of Water Quality. The overall goal of this monitoring evaluates the application of Utah's Forest Water Quality Guidelines (FWQG) that is in Utah's State Non-Point Pollution Prevention Plan. Protocols for conducting FWQG's monitoring have been developed for use by FFSL's service foresters.

During the SFY-2015, the following monitoring activities were completed:

- Processed 4 notifications to conduct timber harvesting activities
- Conducted 0 post-harvest inspections
- Conducted 4 pre/in progress inspections of timber harvesting activities

5) Utah Geologic Survey- Diane Menuz

The Utah Geological Survey (UGS) provides timely scientific information about Utah's geologic environment, resources, and hazards. The Groundwater & Paleontology Program (GW&P), one of five programs at the UGS, conducts detailed studies on groundwater and wetland resources. Three GW&P studies during the past year relate to nonpoint source issues: watershed-based wetland assessments, contamination of a public water supply well in Millville, Cache County, likely due to septic tanks, and salinity issues in southern Sanpete County.

In the summer of 2014, GW&P conducted a probabilistic survey of 72 wetlands in the Weber River watershed. Survey data included water quality samples brought back to the Utah Public Health Laboratory for analysis and observations of potential indicators of water quality stress, including excessive soil disturbance and nuisance algae. The final project report, due in March 2016, will provide estimates of how common potential water quality disturbances are in the watershed and can be used for nonpoint source project planning.

GW&P has completed a two-phase study on a Millville City public supply well with nitrate-nitrogen concentrations near the U.S. EPA's maximum contaminant level of 10 mg/L. GW&P, in cooperation with Utah State University, detected measurable quantities of chemical constituents of pharmaceuticals and personal care products commonly found in septic systems, indicating that at least some of the nitrate contamination is contributed by private septic system discharge. Millville is injecting approximately 15 acre-feet of fresh, treated spring water into the aquifer via the well during periods of low water demand and then pumping the injected spring water back out of the aquifer via the well during periods of high demand. The primary benefits of this project include identifying the source of nitrate contamination, and effectively decreasing reported nitrate concentrations in the Millville City well.

GW&P also worked on a project to determine the sources and extent of salinity in the lower San Pitch River drainage and adjoining Gunnison Irrigation Company (GIC) canal system in southern Sanpete Valley. We spent two field seasons documenting water quality and quantity in the lower San Pitch River drainage along different reaches within the San Pitch River and Twelvemile Creek, as well as nearby canals and springs. We used geologic mapping and geophysical techniques (Transient Electromagnetic Method [TEM]) to isolate and identify regions in the subsurface that likely have an influence on river salinity. We produced GIS maps that show salinity concentrations and groundwater along the San Pitch River channel, 2D-TEM images and interpretations, and a simplified geologic map with a cross section. Overall, the maps emphasize the areas of higher and lower salinity. Our combined geologic, geophysical, and hydrologic assessment indicates the source of salinity in the San Pitch River and Twelvemile Creek is dissolution of salt from the Arapien Shale and its erosional remnants by groundwater and seepage from irrigation works. The data collected for this study provide information necessary to make targeted management decisions to reduce salinity and provide for a sustainable supply of acceptable/suitable quality irrigation water for the GIC and its water users. Ultimately, we made recommendations to mitigate the influence of the highly saline groundwater inflow: limit settling pond seepage, canal seepage, and irrigation return flow near areas having Arapien Shale subcrop, and divert high-salinity water out of the San Pitch River downstream of saline inputs and upstream of higher-quality springs and groundwater seepage.

6 Federal Agency Contributions

The original MOUs between the Department of Environmental Quality and the Forest Service and the Bureau of Land Management were executed in 1992. These MOUs have been reviewed and were revised in 2009. In FY-2015 these agencies began reviewing this MOU and a newly updated MOU is anticipated to be in place by the spring of 2016. The following entities will be part of the newly revised MOU: Forest Service, Bureau of Land Management, National Park Service, Utah Department of Agriculture and Food, Division of Forestry, Fire and State Lands, Utah Division of Wildlife, and DEQ – Division of Water Quality. The MOU is to be reviewed and updated as needed every 5 years.

1) Natural Resources Conservation Service- Norm Evenstad

NRCS employees work in partnership with land users to conserve natural resource on private lands. These employees are distributed among 26 field offices and 2 area offices that cover the state of Utah. The individual field offices are managed by District Conservationists who may cover multiple offices. NRCS employees along with Conservation District employees report progress on activities in the USDA-NRCS performance results system, which is the basis for the following information.

Financial and technical assistance was provided to land owners, sponsors & managers in Utah during FY2015 through the various USDA-NRCS programs. There were no identified Comprehensive Nutrient Management Plans (CNMPs) written or applied in FY2015.

Non-Point Source/Water Quality related practices: The results shown in the table H in the appendices shows all the conservation practices planned and applied during fiscal year 2015. A number of the practices listed have direct & indirect water quality benefits, that as a whole, can show overall positive benefits for surface and ground water quality.

NRCS Water Quality Initiative (NWQI) 2015: \$ 248,000 Used in FY2015

The NRCS National Water Quality Initiative (WQI) establishes priority watersheds nationwide to help farmers, ranchers and forest landowners improve water quality and aquatic habitats in impaired streams. NRCS offers producers an opportunity to implement conservation and management practices through a systems approach to control and trap nutrient and manure runoff. Qualified producers can receive assistance for installing conservation practices such as cover crops and filter strips.

In 2015 the Utah Division of Water Quality recommended that projects in the Hillsdale (160300010307) and Tebbs Hollow (160300010506) watersheds, located on the Upper Sevier River, should be funded using NWQI funds. While there is a high demand for funding in these watersheds, and a large amount of interest with the landowners in the area, it was determined that the possibility of restoring the Upper Sevier River is not very likely. Other funds went to the Lower Main Creek watershed (HUC #160202030404) in Utah County.

Partners sometimes offer financial assistance in addition to NRCS programs. Practices planned with WQI assistance may include: Waste Storage Facility, Pond Sealing/Lining, Solid/Liquid Waste Separation Facility, Waste Transfer, Pumping Plant, Fence, Irrigation System, Sprinkler, Pumping Plant, Structure for Water Control, Irrigation Pipeline, Forage and Biomass Planting, Obstruction Removal, Nutrient Management, Irrigation Water Management, and Riparian Herbaceous Cover.

NRCS will continue to coordinate with local and state agencies, conservation districts, non-governmental organizations and others to implement this initiative. This strategic approach will leverage funds and provide streamlined assistance to help individual agricultural producers take needed actions to reduce the flow of sediment, nutrients and other pollutants into impaired waterways.

NRCS-Utah's intent for prioritization of watersheds for the WQ initiative is to coordinate with local, state and other federal partners as much as possible to leverage any available technical and financial resources.

2) Forest Service- Mark Muir

The Forest Service, an agency of the U.S. Department of Agriculture, manages National Forest System (NFS) lands across the country. All or a portion of six National Forests are in Utah. These public lands are managed by staff at Forest Supervisor Headquarters and Ranger District offices throughout the State, with support from the Intermountain Regional Forester's office in Ogden, Utah.

High-quality water is one of the most important natural resources coming from these NFS lands. In addition to providing drinking water and other municipal needs, this water sustains populations of fish and wildlife, affords recreation opportunities, and provides supplies to meet downstream agricultural and industrial needs throughout the State.

Non-point source pollution control is a key component of managing NFS lands for high-quality water. Direct control is accomplished through two primary mechanisms:

- prescription, implementation, and monitoring of best management practices (BMPs) for a variety of land use and management activities¹, and
- implementation of watershed improvement projects.

Additionally, direct non-point source pollution control may occur after wildfire if burned area emergency response (BAER) assessments prescribe the implementation of treatments designed to mitigate fire effects.

Indirectly, the Forest Service provides for non-point source pollution control through sustaining or restoring watershed function and resilience so that NFS lands are resistant to catastrophic events such as fire, insects and disease, and a changing climate.

In 2015 the Forest Service continued implementation of a national Best Management Practices (BMP) program that provides a standard set of core BMPs² and a consistent means to track and document the use and effectiveness of BMPs on NFS lands across the country. These core BMPs integrate individual State and NFS regional BMPs under one umbrella. They are general and non-prescriptive and will not change the substance of site-specific BMP prescriptions. Site-specific prescriptions will continue to be based on State of Utah BMPs, the Intermountain Region Soil and Water Conservation Practices (SWCP) handbook, Land and Resource Management Plan (LRMP) standard and guidelines specific to each of the six Forests, annual BMP monitoring information, and professional judgment.

The national forests in Utah, in addition to their long-standing use of State BMPs, the SWCP handbook, Forest Plan guidance, annual BMP monitoring, and professional judgment, are using these national core BMPs in project planning, design, and implementation. Implementation and effectiveness monitoring by individual personnel and interdisciplinary teams is a core part of Forest Service best management practices. In 2015, thirty of the national core BMPs were formally monitored by interdisciplinary teams. Results of the reviews will be entered into a national database, which over time will help demonstrate and document the effects of implementing BMPs for different activities across the region and country.

In 2015 the Forest Service continued implementation of the Watershed Condition Framework (WCF)³. Forests within Utah continued implementation of integrated (essential) projects identified in priority watershed restoration action plans written in 2011. These projects are specifically designed to improve or maintain watershed health, including the reduction or elimination of non-point source pollution. During 2015, two watersheds (12 digit HUCs) were moved to an improved condition class, meaning all identified restoration work or essential projects were completed within the watershed: 1) Left Hand Fork Blacksmith Fork and 2) Saddle Creek, both on the Uinta-Wasatch-Cache National Forest. In addition to work in these priority watersheds, Forests completed watershed improvement projects in additional watersheds that

¹ For example, motorized and non-motorized recreation, leasable and locatable minerals, range management, timber management, special uses permitting, wildlife and fisheries habitat management

² http://www.fs.fed.us/biology/resources/pubs/watershed/FS_National_Core_BMPs_April2012.pdf

³ <http://www.fs.fed.us/publications/watershed/>

directly improved watershed conditions. The type of watershed improvement work varied but included projects such as road and trail re-routing or decommissioning, recreation site restoration, gully control, spring and riparian area protection, and stream or wetland restoration (See Table 1 for a summary of Watershed Improvement acres in Utah). Additional projects were implemented that will have an indirect effect on sustaining and restoring watershed function and resilience, such as fuel reduction, aquatic habitat improvement, invasive plant treatment, and forest and rangeland vegetation improvement.

Table 1. Watershed Improvement Projects Completed on National Forest System lands in fiscal year 2015 (October 1, 2014 – September 30, 2015).

Forest	Soil and Water Acres Improved	Soil and Water Acres Improved with Partners*	Total Acres Improved
Ashley	1,426	0	1,426
Dixie	5,153	154	5,307
Fishlake	624	83	707
M-L	9,397	512	9,909
U-W-C	98	0	98
Total	16,698	749	17,447

* Acres improved with partners include a mix of National Forest System (NFS) and external funds.

In addition to BMP implementation/monitoring, and watershed restoration activities, Forest Service (BAER) teams assessed fires that burned in Utah on NFS lands that had potential effects on life and property, long-term soil productivity, and water quality. Common recommendations for burned areas included Early Detection, Rapid Response (EDRR) treatment of noxious and invasive plants, seeding and mulching of hillslopes with moderate to severe soil burn severity, and road or trail drainage improvement projects.

Per the Memorandum of Understanding (MOU) between the State of Utah and federal agencies, a federal consistency review of activities and conditions on NFS lands occurred on the Uinta-Wasatch-Cache National Forest in 2015. Personnel from the Utah Division of Water Quality joined Forest Service personnel for field reviews of various projects, including watershed improvement work done in the Left Hand Fork Blacksmith Fork and Saddle Creek watersheds. Projects reviewed on site included dispersed recreation site relocation out of riparian areas, floodplain reconstruction and reconnection, livestock pasture fences, prescribed fire operations to improve vegetative conditions, road relocation out of riparian/wetland areas, and unauthorized roads or trails that were restored and closed in order to increase vegetation cover and reduce soil erosion. Federal consistency reviews are a useful opportunity for coordination and collaboration on nonpoint source protection issues between the state and federal agencies, and are planned to continue on a different forest each year in Utah.

3) Bureau of Land Management (BLM)- Jeremy Jarnecke

BLM manages approximately 23 million acres of Utah’s public lands with the mission to: *‘sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations.’* BLM manages lands and resources through a multiple-use

framework that provides for a variety of uses including; energy & mineral development, livestock grazing, recreation, and timber harvest, while protecting cultural/ historical properties, water resources, wildlife, and other natural resources.

Utah BLM continues to implement land and watershed improvement projects to benefit water quality through a variety of programs and partnerships including BLM's Clean Water and Watershed Restoration (CWWR) Program, BLM Healthy Lands Initiative, State of Utah Watershed Restoration Initiative, the Bureau of Reclamation Salinity Control Forum, and many local watershed groups. These efforts include implementation of watershed improvement projects designed to improve land health and reduce long-term erosion and sedimentation rates. Watershed improvement based activities are discussed below by Field Office or Management Unit.

To better address watershed conditions, water quality, and to develop watershed improvement projects, BLM Utah is in process of adding Hydrologist/Soil Scientists for all areas of Utah. Currently, the agency has established new positions or augmented current staff by adding Hydrologists in the Moab Field Office, Richfield Field Office, Cedar City Field Office, and the West Desert District (Fillmore and Salt Lake Field Offices).

BLM Healthy Landscape Initiative (HLI) and Utah Watershed Restoration Initiative (WRI)

Utah BLM is in its twelfth year of cooperative implementation of the statewide Utah Watershed Restoration Initiative through its participation in the Utah Partners for Conservation and Development. This is a multi-agency Federal, State, and private partnership treating lands for watershed improvement and long-term habitat restoration. Funds are contributed by partners, including non-governmental organizations and wildlife groups. Projects are submitted and prioritized by regional teams prior to submittal for final approval and funding by the statewide oversight team. BLM funds primarily come through the Wildlife, Fuels, and Healthy Lands Initiative programs. Moab BLM continues to participate in the agreement with the Delores River Restoration Partnership, which has multiple NGOs, private, BLM, and other federal partners focusing efforts on the Delores River.

Under the HLI/WRI program, over 14,000 acres of BLM lands in Utah were treated in 2015, although total treatment area including other Federal, State and private lands as part of the cooperative effort is well more than 2 to 3 times that number. Treatments include riparian restoration, tamarisk and Russian olive removal, sagebrush restoration (Dixie-harrow and seeding), removal of juniper through bullhog and hand thinning methods, wildlife and rangeland seeding, cheatgrass treatment and reseeding degraded rangelands, and other similar projects. The Utah Division of Wildlife Resources website has interactive maps and project descriptions: <http://wildlife.utah.gov/WRI/>

The table J in the appendices is a tally of the projects completed during FY 2015. These are interagency funded projects and funding for most projects is based on the state fiscal year so some of these were actually started in the fall of 2015. More information can be found searching the database utilizing the project number and various report features.

BLM Moab Field Office

The BLM Moab Field Office constructed several additional grazing exclosures in moderately saline soils (8-16 mmhos/cm). This project has been ongoing since FY10, with a goal of one grazing exclosure in every allotment with more than 10% saline soils. Most new exclosures are located adjacent to long-term study sites maintained by BLM range staff. The USGS Southwest

Biological Science Center (Mike Duniway) continues to collect comprehensive soil and vegetation data at permanent paired study plots located inside and outside these grazing exclosures. Monitoring data from these long-term study sites will help direct grazing management actions to ensure stable and healthy soil conditions in these sensitive and highly erodible soils. With good soil conditions, soil erosion and associated salinity loading to the Colorado River Basin is minimized.

This year the BLM worked together with the Grand County Road Department to complete a feasibility study which assessed potential re-location alternatives and stabilizing techniques for the Onion Creek road. This road is located in a narrow canyon corridor and crosses Onion Creek over 25 times in less than 8 miles. With a steep gradient, Onion Creek originates in the La Sal mountains and enters the Colorado River in less than 30 miles. This leads to frequent large floods which damage the roadbed and adjacent stream banks. The feasibility study will identify the most stable location for the road and develop a priority list of future stream bank stabilization projects.

The Moab Field Office also conducted riparian restoration projects along 11 miles of the Colorado and Dolores River Corridors. These projects received over \$250,000 in funding from multiple partners including BLM Clean Water Watershed Restoration funds (CWWR), the Utah Watershed Restoration Initiative (UWRI), the Dolores River Restoration Partnership (DRRP) and The Nature Conservancy (TNC). Restoration actions included removal of invasive Tamarisk trees, herbicide treatments on secondary weeds such as Russian Knapweed and Kochia, and planting 1000 locally-sourced plants at previously treated sites along the Colorado and Dolores Rivers. The plantings were maintained by weeding and watering throughout the year, and are showing great survival rates.



Grazing exclosure in moderately saline soils



BLM recently closed 12 primitive campsites located within the Onion Creek floodplain. Other NPS related work completed by the Moab Field Office includes constructing 5 spring protection fences to protect water quality conditions from grazing uses and closing 12 primitive campsites within the Onion Creek corridor and floodplain. BLM funds a local non-profit group Moab Solutions to work in Mill Creek Canyon to clean up trash, close duplicate hiking trails and pull invasive species.

Vernal Field Office

Arid Land Study

The Bureau of Land Management (BLM) Green River District (GRD) has issued reclamation guidelines for lands managed under its administration that involve the development of a reclamation plan for all surface-disturbing activities. The long-term goal of the reclamation plan is to “facilitate eventual ecosystem reconstruction by returning the land to a safe, stable, and proper functioning condition”, and the short-term goal is to “immediately stabilize disturbed areas and to provide the necessary conditions to achieve the long-term goal”.

The nature of the soils in the Uinta Basin present a challenge to successful reclamation of well pads. The rating of these soils as potential topsoil resources and reclamation materials for revegetation is poor to fair (mostly poor) due to factors such as elevated salinity, high sodium content, high alkalinity, low organic matter content, shallow depth to bedrock, and high rock content.

The study project area is located within the Pariette Watershed. This project involves reclamation techniques on disturbed arid lands. Reclamation success following disturbance has been quite poor.

The project is entering the 5th year and soil amendments were completed in 2014. The study sites were established using different carbon amendments, and barley cover crop for reclamation success. Specifically, treatments consisted of following amendments: control site– no carbon; wood chips; activated carbon; biochar; compost, and desilt material from Pariette Wetlands. Nine plant species were selected for revegetation and included: Indian rice grass var. White River,

Galetta grass var. Viva; Russian wild rye; Needle and threadgrass, Globemallow; Gardiner saltbush; Western wheatgrass; Black sagebrush; and Shadscale saltbush. There were planted in late fall (Dec. 4, 2014) after the soils were frozen.

In 2015 salinity funding was utilized to assess the soil amendments which were initiated in the summer of 2014. Results of field surveys indicate that the greatest factors limiting the successful restoration and revegetation of well pads by desirable native species are lack of soil water, soil salinity and sodicity, shallow soils, and soil compaction. The three main invasive weed species found on well pads are halogeton, cheat grass, and Russian thistle. It appears that wood chips and biochar were able to hold more soil moisture than non-treated controls, and the barley cover crop was initially able to limit weed invasion. It appears that cheat grass was able to capitalize on the greater moisture content provided by wood chips.

BLM VFO is planning on continuing monitoring of the existing soil amendments along with new objectives that were developed from the existing study.

- Minimize weed establishment
- Produce or build quality topsoil from sediments dredged from the Desilt Pond in the Pariette Wetlands
- Identify appropriate revegetation species and determine the best planting methods to ensure the establishment of desirable species.



Barley Cover Crop

4) U.S. National Park Service- Rebecca Weissinger

The National Park Service is a significant land manager of 2.1 million acres in Utah, or about 3.9% of the state, and hosts 9 million visitors per year. National Park System units have a dual Congressional mandate to preserve natural and cultural resources and to provide for their enjoyment by the public in such a manner that will leave them unimpaired for future generations. There are 13 National Park System units in Utah. On-going water quality monitoring, in cooperation with the State of Utah, occurs at seven of these National Park units. In addition to routine water quality monitoring, sampling for pesticides, wastewater indicators, pharmaceuticals,

and personal care products also occurred at seven national park units in Utah in cooperation with the Environmental Protection Agency and U.S. Geological Survey.

In 2015, the National Park Service and USGS completed the second year of a three-year study to investigate mercury bioaccumulation in Lake Powell, Glen Canyon National Recreation Area. The study is collecting detailed, multi-parameter limnological profiles from 24 sites throughout the reservoir and water, sediment, and biological samples from 13 sites, including the San Juan and Escalante River. The samples are being analyzed for a multitude of geochemical and microbiological constituents to evaluate the processes driving the mercury accumulation in striped bass and the consumption advisory issued for the southern portion of the reservoir.

A cooperative effort with Utah Division of Water Quality to resolve *E. coli* contamination in the North Fork Virgin River continued upstream from Zion National Park in 2015. Several agencies and landowners were involved. A pasture rotation system for irrigation and livestock grazing was tested in an attempt to reduce fecal contamination in irrigation return waters. Monitoring in 2015 showed that the contamination is continuing similar to previous years, except that levels of *E. coli* entering the project area from upstream on the watershed were higher than in the past.

The National Park Service also completed the third year of a three-year funded project to treat non-native tamarisk trees and herbaceous non-native invasive plants at priority sites in the riparian corridors of the Colorado and Green Rivers in Canyonlands National Park. The primary benefits of this project include creating better visitor experiences, reducing fire risk in river campsites, preserving biodiversity by decreasing risk of fire spreading into native tree stands, and the eventual replacement of beetle-impacted tamarisk stands with native vegetation. Indirect benefits include overall reduced erosion of bank sediments into the river as fire frequency and fire size is reduced.

7 Federal Consistency Review and NPS Project Tours for FY-15

During FY-15, DEQ continued to use a combination of approaches to work collaboratively with federal land management agencies and others to promote federal consistency with the State NPS Pollution Management Program. As part of this program, tours of projects implemented by federal agencies are organized every year. The following is a summary of a tour that took place in the Uinta-Cache National Forest in 2015.

Utah Federal Consistency Review

Location:

Uinta-Cache National Forest
August 12th, 2015

Participants:

Jim Bowcutt (UDEQ), Carl Adams (UDEQ), Mark Muir (USFS), Charlie Condrat (USFS),
Jennifer Parker (USFS), Ron Vance (USFS)

Left Hand Fork of the Blacksmith Fork River

The Blacksmith Fork River near Hyrum Utah is a very popular location for recreational activities, especially camping and ATV use. The U.S. Forest Service has been implementing several Best Management Practices (BMPs) to help reduce the environmental impacts of recreation and

livestock grazing in this watershed. Where the Forest Service property begins in the Left Hand Fork of the Blacksmith Fork they were having problems with campers setting up their campsites too close to the river. To help deal with this issue they were able to install a fence and berm that made it more difficult to pull camper trailers down to the river. They then reseeded the area, and re-established the flood plain to help better convey high flows downstream. Overall, the grass has come in well, and the project seems to have been a success. They have also implemented several illegal trail closures that have resulted from some of the ATV use that occurs in that canyon.



Reclaimed riparian area near the mouth of the Left Hand Fork of the Blacksmith Fork River

Higher up the canyon people were driving ATVs up the river bed, and parking vehicles in the riparian area. This was causing erosional issues, and compacted the soil which did not allow riparian vegetation to grow. While the Forest Service did not want the vehicles near the river, they did not want to discourage campers from using the area. To address this issue the Forest Service installed large boulders around the camping area and seeded the riparian area. As a result the riparian area is beginning to re-establish, and the illegal ATV and vehicle use have markedly decreased.



Boulders Placed to prohibit vehicles from entering into the riparian zone

Saddle Creek Restoration Project

Saddle Creek is located between Elk Valley and Hardware Ranch in the upper reaches of the Blacksmith Fork Watershed. Historically the riparian area along Saddle Creek was heavily impacted by over-grazing by livestock. The road to access Elk Valley also followed the river

very closely, and at times actually entered the creek bed. Over-grazing and recreational use was causing excessive soil erosion and degrading wildlife habitat along the riparian corridor.

The Forest Service, in cooperation with several partners, decided that they would address the entire watershed beginning with the riparian area. The Forest Service has moved the road within this watershed, placing it higher on the mountain and removing it from the riparian area. They then installed several miles of buck and pole fence along the west side of Saddle Creek which limited livestock access to the creek. Sage brush treatments as well as controlled burns were also implemented in the uplands to help improve feed for livestock and evenly distribute them throughout the watershed. Since the project has been implemented the grass within the riparian area has recovered well, and willows are beginning to re-appear along the stream channel. While Saddle Creek is dry most of the summer, it still provides habitat for cutthroat trout during the spring and allows fish to access beaver ponds found higher in the watershed. The Forest Service hopes that this project will allow water to flow for longer periods of time, allowing the cutthroat trout to continue to exist in this watershed, while improving water quality downstream.



Old Saddle Creek Road that was decommissioned



Saddle Creek Riparian Fencing



Successful controlled burn in the Saddle Creek Watershed

End of report

2015 EPA Project Tour

August 18th-20th, 2015

Location:

Bear River / Weber Watersheds

Participants:

Gary Kleeman (Environmental Protection Agency), Jim Bowcutt, Carl Adams, Michael Allred, Kari Lundeen (Utah Division of Water Quality), Brady Thornock, Nathan Daus, Christian Nelson, Andy Pappas (Utah Department of Agriculture and Food), Justin Elsner (USU Extension) Doug Garfield (Utah Association of Conservation District)

Day 1 August 18th

Upper Bear River Watershed

Saleratus Creek (Rich County)

The Saleratus Creek watershed has long been impacted from season-long grazing of livestock. These grazing activities have been taking place for over 100 years, specifically in the upper areas of the watershed. Landowners and state and federal agencies have been working together to improve the uplands in the watershed over the past several years with much success.

During this tour, five adjacent grazing management projects were visited. These five projects consisted of 14,251 acres of uplands that were treated and seeded. The purpose of these projects was to reduce the amount of woody shrubs such as Rabbit Brush, Sage Brush, and Pinion/ Juniper trees and increase forbs and grasses. This allows the more desirable species to grow thus improving the forage available for wildlife and livestock which will help evenly distribute them over the land scape and reduces soil erosion . This change in vegetation will also increase the amount of precipitation that percolates into the soil, thus increasing the amount of recharge to the aquifer. This can help increase stream flow lower in the watershed as well.

Watering systems were also installed throughout each of the grazing allotments. These systems consisted of a large tank located at the highest point of the basin. These tanks are filled by pumping ground water from a well on site. Pipelines are then run from the large tank to several troughs distributed throughout the rangeland. Many of these troughs are spread out several miles apart. This also help evenly distribute the animals across the rangeland, reducing potential soil erosion.



Range Reseeding



Large Water Holding Tank



Watering trough being installed

Another treatment that was implemented is the thinning of the Pinion / Juniper stands in the watershed. This allows the desirable forbs and grasses to grow, and reduces the amount of water consumed by evergreen trees in the upper part of the watershed. The State of Utah has recognized that erosion coming from Pinion / Juniper stands can be quite large, and these types of treatments are becoming more common around the state. To treat these sites, a brush hog implement was used. The brush hog shreds up the cedar trees, and scatters the wood chips across the soil. This further helps to reduce erosion until the grasses are able to establish. Another common method is chaining the trees, which is a cheaper method, but tends to be more labor intensive.



Pinion Juniper Brush Hog Treatment

Pinion Juniper Brush Hog Treatment

Day 2 August 19th

Middle Bear River Watershed

Coldwater Ranch- Blacksmith Fork River

Coldwater Ranch is a beef cattle operation located in the head waters of the Blacksmith Fork watershed. The ranch consists of roughly 40,000 acres, and runs roughly 1,200 head of cattle from the late spring to the early fall.

In 2009 the owner of Coldwater Ranch approached the NRCS, in hopes of improving the grazing practices that were being used on the ranch. One of the main concerns of the landowner was getting the cattle out of the riparian area, and utilizing the feed that was in the upper reaches of the drainages.

Since the project was initiated, close to 8 miles of riparian fencing has been installed, and two spring developments were created to provide water for cattle higher in the watershed. While fencing was only installed on one side of the creek, the ability for the cattle to obtain water away from the riparian area in locations where the feed is more plentiful has allowed the riparian area to vastly improve. During the tour very few cattle were observed, and most of them were higher in the mountains, away from the riparian zones. Additional fencing is planned using funding from the Utah Department of Agriculture and Food's Grazing Improvement Program. This will be used to better manage the grazing in the upper reaches of the watershed, creating more pastures that livestock will be rotated through during the grazing season.



Coldwater Ranch Before Fencing

Coldwater Ranch After Fencing



Spring Development

Benson/ Amalga Dairy

This dairy began working with the NRCS several years ago to help increase manure storage. On one of the visits to the dairy the local watershed coordinator realized that the water that was draining across the corrals was entering into a drain system the emptied into the Bear River. To help treat this problem the owner of the dairy installed a system designed to prohibit runoff from the dairy from entering the drain and instead enter into a liquid storage system under ground. This tank is equipped with clean out access boxes, and has been a very good fix for the situation.

In addition to the infrastructure that was installed to help capture rain water, the operation also worked to improve the capacity and ability of the dairy to store manure. This was done by installing a larger solids storage area, as well as a structure that holds liquids which is equipped with a pump. This allows the liquids to be applied to neighboring fields when and where appropriate according to the dairy's comprehensive nutrient management plan.



Runoff Drain Structure



Solid Waste Storage Area



Liquid Storage Pit

Cutler Reservoir Shoreline Protection Project

Due to wave action, and the constant fluctuation of water levels in Cutler Reservoir, several shoreline areas in Cutler Reservoir have begun to dramatically erode. While Pacificorp that owns and manages much of the reservoir shoreline has been working to reduce some of this erosion, some of the property where this erosion is taking place is privately owned. Three years ago, the Bear River local watershed coordinator began working with the Larsen family to treat one of the areas that had steep banks caused by this erosion. To treat this area the bank was sloped back and vegetation was planted to help stabilize the area. They also installed a small line of rocks in the water in front of the treatment area. The purpose of these rocks was to help dissipate the waves before they could reach the banks. Overall the project has recovered very well, and it continues to be maintained by the landowner. This project was funded using Section 319 funding.



Cutler Reservoir Bank Stabilization Project

Newton Dairy

Before this dairy began working with the local conservation agencies they were having a difficult time containing all of the manure and wastewater that was being produced by the dairy. As a result sometimes their ponds would overtop sending animal waste down a ditch bank where it would eventually enter Cutler Reservoir.

To help treat this problem the dairy installed a larger earthen storage pond. They also installed a new state of the art liquid-manure separator. This separator takes all the animal waste that is produced by the dairy, and sends it through the mechanical belt press separator. This separator presses the waste. The dry waste can then be reused as bedding, or can be used as compost that is then applied to the land owner's fields. The liquids can be reused to flush the system of additional manure, or it can be pumped to the larger liquid storage pond.

The manure handling system has been very effective for the landowner, and it has allowed him to store all the animal waste that the dairy is producing, and the landowner is happy with the efficiency that the new system has added to his dairy. This project was funded using NRCS and State NPS funding.



Mechanical Separator

Lewiston Dairy

This dairy was having a hard time containing all of the animal manure that was being produced, and as a result runoff was entering into an adjacent wetland. To help remedy this situation the dairy owners are in the process of installing a new manure bunker. This will be one of the largest bunkers that have ever been installed in Cache Valley, and will be roughly the size of a football field when completed.



Manure Bunker Installation

Day 3 August 20th

Lower Bear River Watershed

Bear River Fencing Project

In East Garland, Utah, a landowner has been working with the local conservation district to improve water quality as well as control invasive Russian Olive trees along the main stem of the Bear River. This producer runs large numbers of sheep and cattle, and has fenced nearly 0.7 miles of the Bear River. He is also removing the vast acreage of Russian Olive trees that are on his property. This project was funded using NRCS and Section 319 funding.



East Garland Fencing Project

Bear River City Feedlot Runoff Project

This project helped address runoff from a large feedlot that was entering into the Bear River via a drainage ditch used to convey storm water from the town of Bear River city. The storm water ditch would run past the feedlot owned by the landowner and during large storm events, manure from the landowners feedlot would wash across a road and enter into the Bear River. To remedy this problem the ditch was placed underground and the old ditch was decommissioned. Since the landowner still used the storm water for irrigation on his adjacent pastures, pipes were installed on the ditch, allowing the water to be applied to his pastures more uniformly. Overall this project has made the management of the storm water much easier while improving water quality.



New Piped Water Conveyance Structure

Maple Creek Riparian Project

Maple Creek is a tributary to Mantua Reservoir, which is impaired for nutrients. According to the TMDL Spring Creek is one of the major sources of nutrients to the reservoir. Recently a stream bank fencing/stabilization project was initiated using State NPS funding. Approximately 350 feet of stream bank were treated. While this is a small project, it will be the starting point for many good projects to come. Since this project has been implemented many of the adjacent landowners have expressed interest in implementing similar projects in the future. It is anticipated that this watershed will be one of the targeted basins in FY-2017. This project was funded using State NPS funding.



Untreated Maple Creek Reach

Maple Creek Fencing Project

South Fork of Chalk Creek

Over the years several projects have taken place in the lower reaches of Chalk Creek. The local watershed group and the local Conservation District has begun to focus on doing work in the upper section of the watershed. One of the recent projects that was implemented in this portion of the watershed was a culvert removal and restoration project. This project was identified when a large culvert failed causing thousands of tons of sediment to enter into Fish Creek. Several partners joined forces to remove the remaining culvert, slope the banks back, and plant native grass mixes and willows to stabilize the banks along this stretch. While there is some erosion that is still occurring the project sponsors are satisfied with the project which reduced a large sediment reservoir, and helped restore habitat for the native cutthroat trout.



Fish Creek Culvert Before



Fish Creek Project After

The tour also consisted of visiting other projects in need of implementation in the upper reaches of the watershed. The CRMP for the South Fork of Chalk Creek will be completed soon. To develop this CRMP several assessment activities were done, and several projects were identified that should be implemented. Some of these projects include improved grazing practices in the headwaters of the watershed. They plan to implement projects similar to the ones visited in the Upper Bear River where off-stream watering sites will be developed that will draw the cattle out of the riparian areas and help better utilize forage in the uplands. They will also address erosion that is taking place as a result of past oil drilling activity. It is anticipated that the majority of these projects will be implemented when they are the targeted basin in FY-2018.



Cattle in the Riparian Area on Fish Creek

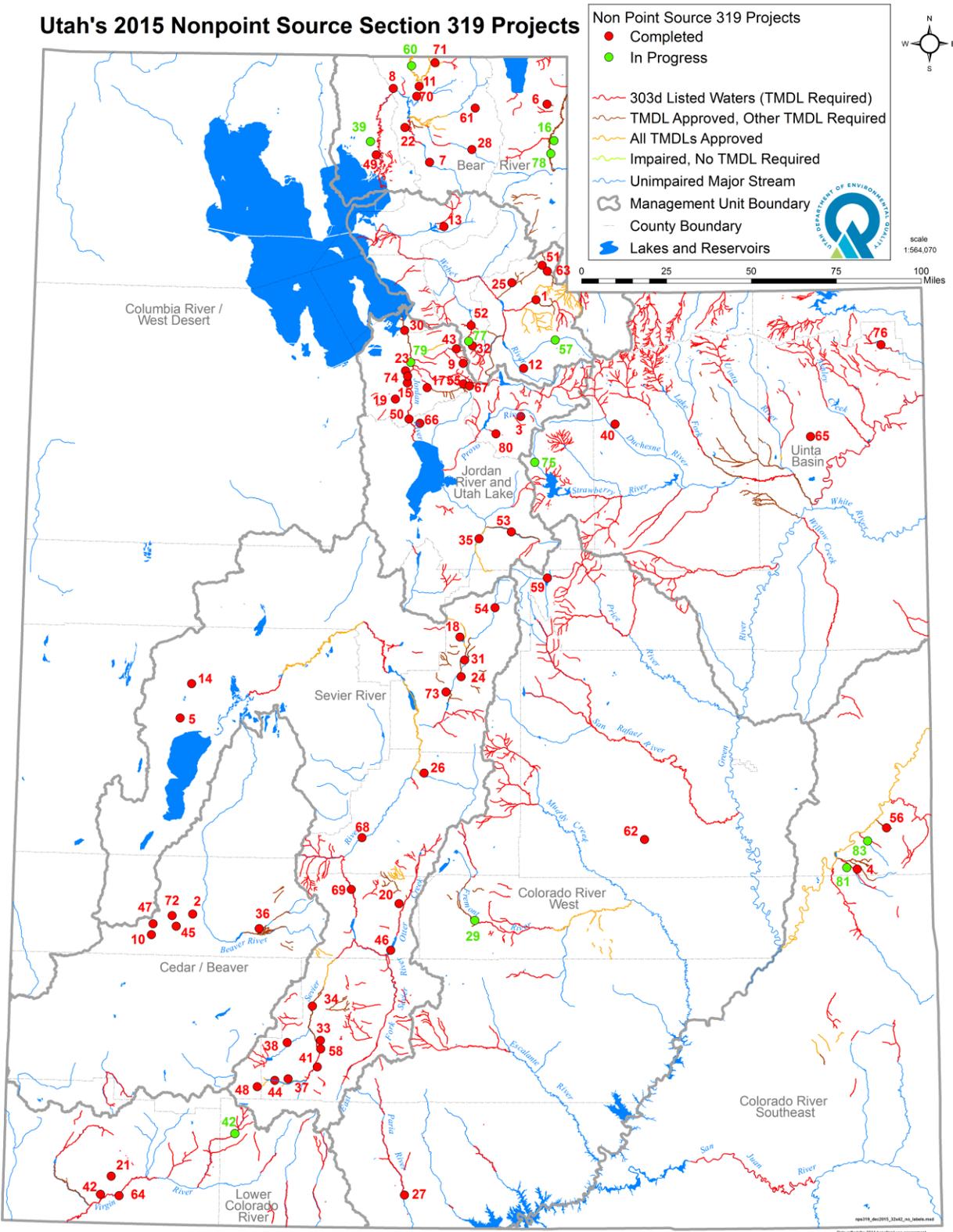


Abandoned Oil Well Pad on Fish Creek

8 APPENDICES

Figure 1 Project Location Map

Utah's 2015 Nonpoint Source Section 319 Projects



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TABLE A- COMPLETED AND ACTIVE 319 PROJECTS (SEE FIGURE 1)

Map_ID	STATUS	PROJECT_NAME	Map_ID	STATUS	PROJECT_NAME
1	Completed	Chalk Creek	43	Completed	Emmigration Creek Water Quality Study
2	Completed	Milford Baseline GW and Aquifer Mapping	44	Completed	Groundwater (Mammoth Creek)
3	Completed	Wasatch County GW Study and Aquifer Mapping	45	Completed	Mitigation of NPS Chemicals - Milford Groundwater
4	Completed	Spanish Valley Baseline GW Mapping	46	Completed	Otter Creek Reservoir TMDL
5	Completed	South Sevier Desert GW Recharge Area Mapping	47	Completed	Milford Microbial Contamination GW Study
6	Completed	Bear River Watershed Outreach Information/Education	48	Completed	Cedar Mountain GW Assessment
7	Completed	Little Bear River Animal Waste System	49	Completed	Bear River Information / Education
8	Completed	Bear River TMDL Development	50	Completed	Jordan River WQ/TMDL Assessment
9	Completed	Millcreek Canyon Watershed Phase II	51	Completed	Rees Creek Demonstration
10	Completed	Milford Baseline GW Contaminant Inventory	52	Completed	East Canyon Instream Flow
11	Completed	Bear River Groundwater Contaminant Inventory	53	Completed	Soldier Creek Spanish Fork
12	Completed	Kamas Valley Groundwater	54	Completed	San Pitch Watershed Implementation
13	Completed	Ogden Valley GW Recharge Area Mapping	55	Completed	Little Cottonwood Implementation TMDL
14	Completed	Millard County Groundwater	56	Completed	Onion Creek Impementation TMDL
15	Completed	Jordan River Wetland	57	In Progress	Upper Weber River Tech. Assist. & Information and Educ.
16	In Progress	Bear River (Rich County)	58	Completed	Upper Sevier River TMDL Implementation
17	Completed	SL County Lawn Fertilizer/Pesticides Impacts on GW	59	Completed	Scofield Reservoir TMDL Implementation
18	Completed	Sanpete / Moroni Groundwater	60	In Progress	Middle Bear River
19	Completed	Salt Lake Valley Drink. Water Source Protect.	61	Completed	Spawn Creek Bank Restoration
20	Completed	Otter Creek	62	Completed	Colorado River West
21	Completed	Washington County Septic Tank Effects on GW	63	Completed	Rees Creek Phase II
22	Completed	Cache Valley GW/Aquifer Assessment & Classification	64	Completed	Virgin River TMDL Implementation
23	Completed	Jordan River Parkway Millcreek Riparian	65	Completed	Oil/Gas Erosion Control
24	Completed	Sanpete Valley WQ Assessment and GW Mapping	66	Completed	Jordan Watershed Council
25	Completed	Echo Creek Demonstration	67	Completed	Alta Fen Rehab
26	Completed	Stuart Johnson Salina Canyon	68	Completed	Middle Sevier River Watershed TMDL Implementation
27	Completed	Paria River Restoration Demonstration	69	Completed	Sevier River @Marysvale Animal Waste Demonstr
28	Completed	Hardware Ranch Demonstration	70	Completed	Bear River Amalga
29	Completed	Fremont River Demonstration	71	Completed	Cub River
30	Completed	Peace Trees Information/Education (Salt Lake City)	72	Completed	Milford (Private Wells)
31	Completed	San Pitch River Information/Education	73	Completed	Sanpete Valley GW Recharge Area Mapping
32	Completed	East Canyon Creek	74	Completed	Jordan River Ecosystem Restoration
33	Completed	Upper Sevier Rangleland Improvement Demonstration	75	In Progress	Upper Strawberry River Riparian Management
34	Completed	USU Panguitch - Sevier River	76	Completed	Matt Warner Reservoir/ Pot Creek Riparian Management
35	Completed	Thistle Creek	77	In Progress	East Canyon Stream Restoration
36	Completed	Beaver River	78	In Progress	Upper Bear River Riparian Restoration, BLRC
37	Completed	Mammoth Creek	79	In Progress	Jordan River Restoration
38	Completed	Panguitch Creek	80	Completed	Wallsburg Watershed Restoration
39	In Progress	Lower Bear River Malad	81	In Progress	Spanish Valley Watershed Implementation
40	In Progress	Duchesne River	82	In Progress	North Fork Virgin River Irrigation
41	Completed	Upper Sevier River Information / Education	83	In Progress	Castle Creek Restoration
42	Completed	Virgin River Information / Education			

TABLE B- 319 FINAL PROJECT REPORTS SUBMITTED IN FY-15

Project Title	Total 319 Award	Date Received
FY-09 Lower Bear River TMDL Implementation	\$41,000	12/30/2014
FY-09 Upper Bear River TMDL Implementation	\$153,140	12/15/2014
FY-09 Middle Sevier TMDL Implementation	\$44,984	12/15/2014
FY-09 Upper Sevier TMDL Implementation	\$122,790	9/05/2014
FY-09 West Colorado River TMDL Implementation	\$85,017	12/29/2014
FY-09 Forest Water Quality Guidelines	\$33,870	12/15/2014
FY-09 Emigration Creek Implementation	\$46,633	12/15/2014
FY-09 Little cottonwood Zinc Project	\$24,807	1/13/2015
FY-10 USU NPS I&E Outreach	\$37,000	8/12/2014
FY-10 West Colorado River Watershed Improvement	\$45,000	12/29/2014
FY-10 USU Septic system Education Enhancement	\$51,100	10/20/2014
FY-10 Salt Lake County Stream Guide	\$31,100	12/19/2014
FY-14 Wallsburg Watershed Restoration Project	\$150,000	2/11/2015

TABLE C- SUMMARY OF ACTIVE UTAH 319(H) GRANTS FY-15

Project Title	Total NPS Award	Grant Status
Matt Warner/Pot Creek Road Rehabilitation FY-10	\$63,600	Project Complete Final Report Approved
USU NPS I & E Outreach FY-10	\$37,000	Project Complete Final Report Approved
Lower Bear R TMDL Impl. FY-10	\$44,000	Project Complete Awaiting Final Report
Middle Bear R TMDL Impl FY-10	\$136,000	Project Complete Awaiting Final Report
Upper Bear R TMDL Impl FY-10	\$70,000	Project Complete Awaiting Final Report
West Colorado River Watershed Improvement FY-10	\$45,000	Project Complete Final Report Approved
USU Septic System Ed. Enhancement FY-10	\$51,100	Project Complete Final Report Approved
Utah Watershed Coordinating Council FY-10	\$30,000	Project Complete Final Report Approved
Upper Bear Riparian Restoration FY-10	\$15,600	Project Complete Awaiting Final Report
East Canyon Stream Restoration - Phase IV FY-10	\$50,000	Project Complete Awaiting Final Report
Mud Ck/Scofield Riparian Restoration FY-10	\$50,000	Project Complete Final Report Approved
Salt Lake County Stream Guide FY-10	\$31,100	Project Complete Final Report Approved
Jordan River Council Capacity - I&E FY-10	\$41,600	Project Complete Final Report Approved
TMDL Local Watershed Coordinators FY-10	\$400,000	Project Complete Final Report Approved
Utah NPS Program - Management Review FY-10	\$66,582	Project Complete Final Report Approved
Utah Watershed Coordinating council FY-11	\$10,000	Project Complete Awaiting Final Report
USU Volunteer Monitoring and I&E FY-11	\$102,500	Project Complete Final Report Submitted
Utah Watershed Coordinating council FY-11	\$340,000	Project Complete Awaiting Final Report
East Canyon Restoration FY-11	\$380,421	Ongoing
TMDL Local Watershed Coordinators FY-11	\$340,000	Project Complete Awaiting Final Report
Utah Watershed Coordinating council FY-12	\$10,000	Ongoing
USU Volunteer Monitoring and I&E FY-12	\$102,500	Ongoing
East Canyon Restoration FY-	\$283,070	Ongoing

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12		
Upper Weber TMDL Implementation FY-12	\$95,230	Ongoing
TMDL Local Watershed Coordinators FY-12	\$340,000	Project Complete Awaiting Final Report
USU Volunteer Monitoring and I&E FY-13	\$97,000	Ongoing
Strawberry River Restoration FY-13	\$358,044	Ongoing
Duchesne River Restoration FY-13	\$66,577	Project Complete Awaiting Final Report
TMDL Local Watershed Coordinators FY-13	\$340,000	Project Complete Awaiting Final Report
USU Volunteer Monitoring Program FY-14	\$84,525	Ongoing
Local Watershed Coordinators FY-14	\$340,000	Ongoing
Wallsburg Watershed Restoration Project FY-14	\$150,000	Project Complete Final Report Submitted
Jordan River Restoration Project FY-14	\$319,096	Ongoing
USU Volunteer Monitoring Program FY-15	\$83,250	Ongoing
Local Watershed Coordinators FY-15	\$340,000	Ongoing
Strawberry River Restoration FY-15	\$75,000	Ongoing
Spanish Valley Watershed Implementation FY-15	\$118,686	Ongoing
North Fork Virgin River Irrigation Project FY-15	\$183,855	Ongoing
Castle Creek Restoration FY-15	\$12,530	Ongoing
Fremont River Restoration	\$66,200	Ongoing

TABLE D- APPROVED TMDLS

Water Body	Date Approved
Chalk Creek	12/23/1997
Otter Creek	12/23/1997
Little Bear River	5/23/2000
Mantua Reservoir	5/23/2000
East Canyon Creek	9/1/2000
East Canyon Reservoir	9/14/2010
Kents Lake	9/1/2000
LaBaron Reservoir	9/1/2000
Minersville Reservoir	9/1/2000
Puffer Lake	9/1/2000
Scofield Reservoir	9/1/2000
Onion Creek (near Moab)	7/25/2002
Cottonwood Wash	9/9/2002
Deer Creek Reservoir	9/9/2002
Hyrum Reservoir	9/9/2002
Little Cottonwood Creek	9/9/2002
Lower Bear River	9/9/2002
Malad River	9/9/2002
Mill Creek (near Moab)	9/9/2002
Spring Creek	9/9/2002
Forsyth Reservoir	9/27/2002
Johnson Valley Reservoir	9/27/2002
Lower Fremont River	9/27/2002
Mill Meadow Reservoir	9/27/2002
UM Creek	9/27/2002
Upper Fremont River	9/27/2012
Deep Creek	10/9/2002
Uinta River	10/9/2002
Pineview Reservoir	12/9/2002
Browne Lake	2/19/2003
San Pitch River	11/18/2003
Newton Creek	6/24/2004
Panguitch Lake	6/24/2004
West Colorado	8/4/2004
Silver Creek	8/4/2004

Upper Sevier River	8/4/2004
Lower and Middle Sevier River	9/17/2004
Lower Colorado River	9/20/2004
Upper Bear River	8/4/2006
Echo Creek	8/4/2006
Soldier Creek	8/4/2006
East Fork Sevier River	8/4/2006
Koosharem Reservoir	8/4/2006
Lower Box Creek Reservoir	8/4/2006
Otter Creek Reservoir	8/4/2006
Thistle Creek	7/9/2007
Strawberry Reservoir	7/9/2007
Matt Warner Reservoir	7/9/2007
Calder Reservoir	7/9/2007
Lower Duchesne River	7/9/2007
Lake Fork River	7/9/2007
Brough Reservoir	8/22/2008
Steinaker Reservoir	8/22/2008
Red Fleet Reservoir	8/22/2008
Newcastle Reservoir	8/22/2008
Cutler Reservoir	2/23/2010
Middle Bear River	2/23/2010
Pariette Draw	9/28/2010
Emigration Creek	7/18/2012
Jordan River Phase I	6/05/2013
Echo Reservoir	9/16/2014
Colorado River	6/17/2014
Rockport Reservoir	9/16/2014

TABLE E- WATERSHED PLANS

Watershed	Date Approved
Middle and Lower Sevier	October-10
San Pitch	January-06
Upper Sevier	June-04
Virgin River	February-06
Paria River	2006
Escalante River	2006
Salt Lake Countywide Water Quality Stewardship Plan	2009
Wallsburg CRMP	10/01/2012
Duchesne River	7/31/2014
Strawberry River Watershed	12/18/2014
Spanish Valley Watershed Plan	Submitted to EPA for Approval
North Fork of The Virgin River	Submitted to EPA for Approval
Upper Bear River Watershed Plan	Submitted to DEQ for Approval
San Pitch Watershed Plan (revision)	Initiated
Weber River	Initiated
Price River	Submitted to EPA for Approval
South Fork of Chalk Creek	Submitted to DEQ for Approval
Spanish Fork River	Initiated
Pinto Creek	Initiated
Upper Sevier River (revision)	Initiated
Huntington Creek	Initiated
Maple Creek	Initiated
Montezuma Creek	Initiated

TABLE F- STATE NPS FUNDS ALLOCATED IN 2015

Project Title	Watershed	Project Type	Amount Awarded
Local Watershed Coordinators	Statewide	Technical Assistance	\$30,000
Mercury Take Back	Statewide	Mercury	\$6,000
North Fork (Upper) Irrigation Project	Colorado	Irrigation	\$154,443
Moab Technical Assistance	SE Colorado	Technical Assistance	\$35,000
La Sal Spring/Wetland Protection	SE Colorado	Grazing Management	\$31,500
Wallsburg Streambank Restoration	Jordan River/Utah Lake	Stream Bank	\$85,000
Maple Creek Stream Bank Project	Bear River	Stream Bank	\$15,000
Wallsburg Septic Study	Jordan River/Utah Lake	Study	\$16,100
Producers Education Through Workshops and the Producers Website	Statewide	I&E	\$20,125
Utah Envirothon	Statewide	I&E	\$3,500
St. George Detention Basin	Colorado	Storm Water	\$78,510
Provo River I&E	Jordan River/Utah Lake	I&E	\$15,000
Kunzler AFO	Bear River	AFO	\$20,000
Siddoway Ranch Conservation Easement	Weber	conservation Easement	\$5,000
Rick Hafen Stream Bank	Cedar/Beaver	Stream Bank	\$14,729
Burningham Stream Bank	Weber	Stream Bank	\$23,000
D&S Dairy Manure Management	Bear River	AFO	\$20,000
Riparian Grazing Management Workshop	Statewide	I&E	\$20,000
Onsite BMP Manual	Statewide	I&E	\$30,000
Water Week	Statewide	I&E	\$5,000
Mike Morgan Fencing	Weber	Fencing	\$11,300
Sutherland Stream Bank	Weber	Stream Bank	\$30,000
Turpin River Project	San Pitch	Stream Bank	\$75,000
Hafen Pinto Creek Stream Bank	Cedar/Beaver	Stream Bank	\$29,783
Blaine Nature Preserve Riparian Demonstration Project	Jordan River	Stream Bank	\$10,460
Fish Lake Parking Lot Project	Colorado	Road Maintenance	\$25,000
Tie Fork Road Stream Crossing #1	Utah Lake	Road Improvements	\$36,290
Pack Creek Stream Bank Restoration	SE Colorado	Stream Bank	\$36,709
Parry Stream Bank Project	San Pitch	Stream Bank	\$15,000
Porcupine Watershed Restoration	SE Colorado	Watershed Restoration	\$16,157
Bench River Project	San Pitch	Stream Bank	\$45,000
Farmington Bay Student Research	GSL	Study	\$2,000

Project			
Strawberry River Restoration	Uinta Basin	Stream Bank	\$13,291
On-site Reserve	Statewide	On-site	\$26,103
Total			\$1,000,000

TABLE G- ADDITIONAL FUNDING USED IN CONJUNCTION WITH SECTION 319 FUNDING IN FY-15.

Funding Source	Amount
Utah State NPS Funding	\$318,000
Watershed Restoration Initiative	\$147,747
Bureau of Reclamation	\$960,000
Environmental Quality Incentive Program (EQIP)	\$496,244
County Funds	\$132,896
NRCS Salinity Funding	\$1,500,000
Irrigation Companies	\$17,845
Snyderville Basin Water Reclamation District	\$41,000
Watershed Groups	\$50,000
USGS	\$80,720
Utah Division of Wildlife Resources	\$8,600
Local Conservation Districts	\$4,120
Utah Department of Agriculture and Food	\$100,000
Utah Grazing Improvement Program	\$25,874
U.S. Forest Service	\$18,526
Total	\$3,901,572

TABLE H- SUMMARY CONSERVATION PRACTICES- NRCS FISCAL YEAR 2014

Utah FY2015 Summary – Conservation Practices (Practice #)	Planned (acres)	Applied (acres)	Planned Count	Applied Count
Access Road (560) (ft)		1,253		1
Agricultural Energy Management Plan, Landscape - Written (124) (no)		22		22
Agricultural Energy Management Plan - Written (128) (no)	11	2	11	2
Agricultural Energy Management Plan, Headquarters - Written (122) (no)		6		6
Agricultural Secondary Containment Facility (710) (no)		1		1
Biological suppression and other non-chemical techniques to manage brush, weeds and invasive species (WQL01) (ac)		208		4
Brush Management (314) (ac)	10,192	10,657	109	116
Building Envelope Improvement (672) (no)	1		1	
Channel Bed Stabilization (584) (ft)	520	1,106	10	22
Conservation Cover (327) (ac)	38	1,227	10	24
Conservation Crop Rotation (328) (ac)	916	464	30	17
Cover Crop (340) (ac)	325	520	3	15
Critical Area Planting (342) (ac)	18	2	4	2
Dike (356) (ft)	461		1	
Diversion (362) (ft)		6,642		29
Dust Control on Unpaved Roads and Surfaces (373) (sq ft)		181,700		5
Farmstead Energy Improvement (374) (no)	2	3	2	3
Fence (382) (ft)	216,057	242,146	112	99
Filter Strip (393) (ac)		1		1
Firebreak (394) (ft)		12,822		5
Forage and Biomass Planting (512) (ac)	321	288	19	22
Forage Harvest Management (511) (ac)	287	1,370	7	32
Forest Management Plan - Written (106) (no)	1	3	1	3
Forest Stand Improvement (666) (ac)	12	126	8	8
Grade Stabilization Structure (410) (no)	4		4	
Grazing management to improve wildlife habitat (ANM09) (ac)		4,928		34
Harvest hay in a manner that allows wildlife to flush and escape (ANM10) (ac)		2,506		105
Hedgerow Planting (422) (ft)	350		1	
Herbaceous Weed Control (315) (ac)	4,906	5,249	68	95
Integrated Pest Management (IPM) (595) (ac)	940	7,326	92	262
Irrigation Ditch Lining (428) (ft)	20,024	23,938	18	15
Irrigation Land Leveling (464) (ac)	492	456	27	27
Irrigation Pipeline (430) (ft)	259,299	291,395	250	361
Irrigation Reservoir (436) (ac-ft)	7	26	6	7
Irrigation system automation (WQT01) (ac)		1,911		17
Irrigation System, Microirrigation (441) (ac)	84	54	21	14

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Irrigation System, Surface and Subsurface (443) (ac)	185	38	21	2
Irrigation Water Conveyance (430) (ft)		2,003		6
Irrigation Water Management (449) (ac)	3,092	13,916	161	760
Irrigation Water Management Plan - Written (118) (no)		16		16
Lighting System Improvement (670) (no)	1	1	1	1
Livestock Pipeline (516) (ft)	209,909	209,949	74	67
Monitor key grazing areas to improve grazing management (PLT02) (ac)		13,988		109
Monitoring nutritional status of livestock using the NUTBAL PRO System (ANM17) (ac)		123		6
Mulching (484) (ac)	2	346	1	18
Nutrient Management (590) (ac)	952	5,898	68	282
Obstruction Removal (500) (ac)		1		3
Open Channel (582) (ft)		6,201		2
Pollinator Habitat Plan - Written (146) (no)	2		2	
Pond (378) (no)	3	2	3	2
Pond Sealing or Lining, Bentonite Sealant (521C) (no)	1	36	1	2
Pond Sealing or Lining, Compacted Clay Treatment (521D) (no)	1		1	
Pond Sealing or Lining, Flexible Membrane (521A) (no)	3	2	3	2
Pond Sealing or Lining, Soil Dispersant (521B) (no)		1		1
Prairie Restoration for Grazing and Wildlife Habitat (ANM21) (ac)		8		1
Prescribed Grazing (528) (ac)	226,638	145,635	178	340
Provide Livestock Protection Away from Sensitive Areas (WQL23) (ac)		100		5
Pumping Plant (533) (no)	71	70	72	69
Range Planting (550) (ac)	6,195	7,852	65	73
Recycle 100% of farm lubricants (ENR04) (no)		20		20
Reduce the concentration of nutrients on livestock farms (WQL15) (ac)		108		2
Regional weather networks for irrigation scheduling (WQT04) (ac)		108		2
Residue and Tillage Management, No-Till (329) (ac)		9,942		128
Residue and Tillage Management, Reduced Till (345) (ac)	65	411	1	16
Restoration and Management of Rare and Declining Habitats (643) (ac)		3		1
Retrofit watering facility for wildlife escape and enhanced access for bats and bird species (ANM38) (no)	9		9	
Riparian Forest Buffer (391) (ac)	2	1	9	4
Riparian Herbaceous Cover (390) (ac)	5		5	
Roof Runoff Structure (558) (no)		1		1
Rotation of supplement and feeding areas (WQL03) (ac)	58,350	13,868	460	108
Seasonal High Tunnel System for Crops (798) (sq ft)	48,771	46,643	26	27
Spring Development (574) (no)	3	5	3	5
Sprinkler System (442) (ac)	4,363	6,054	214	350
Stream Crossing (578) (no)	12	4	12	4

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Stream Habitat Improvement and Management (395) (ac)	4	3	6	1
Streambank and Shoreline Protection (580) (ft)	14,520	10,732	86	39
Structure for Water Control (587) (no)	99	178	96	164
Structures for Wildlife (649) (no)	22,975	4	55	4
Terrace (600) (ft)	40,711	38,388	20	7
Trails and Walkways (575) (ft)	20		1	
Tree/Shrub Establishment (612) (ac)	5	35	10	15
Tree/Shrub Site Preparation (490) (ac)	1	1	1	2
Upland Wildlife Habitat Management (645) (ac)	29,011	26,423	84	46
Use deep rooted crops to breakup soil compaction (SQL05) (ac)		121		1
Use drift reducing nozzles, low pressures, lower boom height and adjuvants to reduce pesticide drift (AIR04) (ac)		2,251		31
Variable speed motor-drive systems (ENR13) (no)	1		1	
Waste Facility Closure (360) (no)		1		1
Waste Separation Facility (632) (no)		1		1
Waste Storage Facility (313) (no)	3	18	3	18
Waste Transfer (634) (no)	4	5	4	5
Waste Treatment Lagoon (359) (no)	1		1	
Water and Sediment Control Basin (638) (no)		2		2
Water Well (642) (no)	8	2	8	2
Watering Facility (614) (no)	108	109	108	84
Well Decommissioning (351) (no)	1		1	
Windbreak/Shelterbelt Establishment (380) (ft)	4,090	3,720	8	2
Woody Residue Treatment (384) (ac)	6,022	7,236	34	40

TABLE I- MILESTONES OF THE UTAH STATEWIDE NPS PROGRAM

Milestone	2013	2014	2015
Objective 1: Environmental Protection:			
Number of TMDLs Completed	2	2	1
Number of TMDLs Initiated	Huntington Creek-Selenium Pelican Lake-pH Nine Mile Creek-Temperature	Huntington Creek-selenium Parley's Creek-E.coli Lower Bear River-TP Red Creek Reservoir-TP	Nine Mile Creek-Temperature Silver Creek-TDS Utah Lake-Phosphorus Jordan River-Ecoli, Arsenic, Cadmium
Number of 9 Element Watershed Based Plans Developed	Strawberry River Duchesne River	Spanish Valley North Fork of Virgin	Price River Upper Bear River North Fork of Chalk Creek Weber River
Number of 9 Element Watershed Based Plans Initiated	Price River North Fork of the Virgin River Otter Creek Upper Sevier San Pitch Middle Green/Desolation Canyon Weber River Watershed Plan Upper Weber Watershed Plan	Price River Upper Sevier San Pitch Middle Green/Desolation Canyon Weber River North Fork of Chalk Creek Spanish Fork River Pinto Creek	Huntington Creek Maple Creek Montezuma Creek
Number of projects dedicated to the protection of threatened waterbodies identified in Utah's 303(d) list	0	The Cart Creek Watershed project funded using State NPS funding.	Tie Fork road Stream Crossing funded using State NPS funding.
Number of projects focused on groundwater protection throughout the state	One Septic I&E Program, One Groundwater outreach program.\$78,041 total in State NPS Funding	One Septic I&E Program, One Groundwater outreach program \$41,142. Bothwell ground water has continued to be implemented. \$14,358 for septic enhancements.	Aside from two grants focusing on septic system maintenance, no funding was spent on groundwater protection using FY-15 funding.
Objective 2: Improve Program Efficiency and Effectiveness through Reporting and			

Evaluation.			
Total Number of Stream Miles Restored	0.77 miles of in-stream restoration implemented 5.35 miles of protective riparian fencing implemented	.71 miles of in-stream restoration 2.01 miles of riparian fencing	2.2 miles of stream restoration implemented in FY-2015 5.8 miles of riparian fencing implemented in FY-2015
Total Estimated Load Reductions Reduced in Project Areas (includes reductions from annual and final reports)	Nitrogen- 10,161 lbs/year Phosphorus- 3,878 lbs/year Sediment- 2,500 tons/year	Phosphorus- 8,899 lbs/year Sediment- 8,942 tons/year E.coli- 3,100 lbs/year Nitrogen-20,385 lbs/year	Nitrogen- 7,766 lbs/year Sediment- 903 tons/year Phosphorus-4,286 lbs/year TDS-2,359 tons/year
Number of Final Project Reports Submitted	10 (See Table B)	9 (See Table B)	13 (See Table B)
Number of 319 Grants Open During the Fiscal Year	6 (See Table5)	6 (See Table5)	6 (See Table5)
Amount of Unexpended Funds in Each Open 319 Grant (As of June 30, 2014)	FY-08- \$90,405 FY-09- \$252,811 FY-10- \$188,479 FY-11- \$341,358 FY-12- \$667,452 FY-13- \$861,621 (See Table1)	FY-09- \$206,697 FY-10- \$148,287 FY-11- \$76,155 FY-12- \$295,598 FY-13- \$724,575 FY-14- \$893,621	FY-11- \$62,994 FY-12- \$190,509 FY-13- \$167,993 FY-14- \$558,943 FY-15- \$879,521
Number of Success Stories Showing the environmental Benefits of Completed NPS Projects Submitted to EPA for Approval	2- Cub River and East Canyon Creek	1- Fremont River	3 -Main Creek Spring Creek Strawberry River
Objective 3: Improve Public Participation and Understanding of NPS Issues			
Number of Participants Involved in the Statewide Volunteer Monitoring Program	196	448	980
Number of I&E Projects Implemented	3 projects -AFO Outreach (NPS)	6 projects -AFO Outreach (NPS)	7 projects -Cedar Beaver I&E (319) Volunteer Monitoring Program

with Section 319 and State NPS Funding	-Septic I&E Outreach (NPS) -Volunteer monitoirng program (319)	-Septic I&E Outreach (NPS) -Volunteer monitoirng program (319) -Mercury Take Back (NPS) -Strawberry Valley I&E (NPS) -Rain Water Exhibit (NPS)	(319) AFO outreach (NPS) Envirothon (NPS) Riparian Grazing Workshop (NPS) Onsite BMP Manual (NPS) Water Week AWWA (NPS)
Updates Made to the State NPS Program Website	The website was updated to include additional information for grant applicants including Final reporting guidance, and grant applications. In 2014 USU Waterquality extension will begin development of a much improved website.	We have begun working with USU Extension to create a website focused solely on NPS pollution. This will include an interactive map showing where projects have taken place in the state as well as movies highlighting the NPS projects that have been implemented thoroughout the state.	Utah State University has made good headway on the nes NPS Program website. This website will be completed by the end of the calendar year. The website can be found at: http://www.utahcleanwater.org/
Objective 4: Improve Data Collection and Management			
Track Updates Made to Enhance NPS Monitoroing in the Division of Water Quality's Annual Monitoirng Strategy	Additional monitoring equipment was purchased for the Local Watershed Coordinators to assist with NPS project monitoring. Trainings were also offered on the development of SAPs.	The equipment that was purchased in 2013 has been distributed to the local watershed coordinators, and a training was conducted during the sumer of 2014 showing the local watershed coordinators how to use this equipment.	Watershed Coordinators are now collecting data monthly to demonstrate the effectiveness of the best management practices that are being implemented. Monitoring locations were selected for the Bear River Watershed in cooperation with the local work group, and pre-implementation data has been collected since the summer of 2015. The local watershed coordinator is also working with Tetrtech to develop a SAP in the Upper Sevier Watershed.
Number of SAPs Developed	8	2 Many of the SAPs needed throughout the basins were developed last year. It is anticipated that	During FY-2015 the local watershed coordinators dedicated the majority of their time to implementing the 10 existing SAPs. In talking with the local watershed

		several more will be developed next year.	coordinators, it is anticipated that 2-3 more SAPs will be developed in 2016.
Track Status and updates of AWQMS database	See Section 4.4 of this report	See Section 4.4 of this report	See Section 4.4 of this report
Report on Water Quality Data Uploaded to the EPA WQX Database	See Section 4.4 of this report	See Section 4.4 of this report	See Section 4.4 of this report
Objective 5: Improve Coordination of Governmental and Private Sectors			
Hold Annual NPS Management Program Coordination Meetings	Held February 26, 2013	Held February 26 th , 2014	Held March 3 rd , 2014
Conduct Annual Consistency Reviews with State and Federal Agencies	Conducted August 13 th and 14 th , 2013.	Conducted October 7 th and 8 th , 2014	Conducted August 12 th , 2015
Number of Water Quality Task Force Meetings Held During the Fiscal Year	Three meetings were held. October 10 th 2012, February 14 th , 2013, and May 22 nd 2013	Three meetings were held. August 7 th , 2013, November 19 th , 2013, and May 19 th , 2014.	Four meetings were held. August 25 th , 2014, December 4 th , 2014, and February 12 th , 2015, June 17 th , 2015.
Amount of Funding Used to Leverage 319 Funding Throughout the State	\$1,970,887 (See Table G)	\$4,571,096 (See Table G)	\$3,901,572 (See Table G)

TABLE J- FY-14 BLM WRI PROJECTS

WRI Project	Project Name	Total Funding WRI \$	Acres Treated (Terrestrial & Aquatic)
2931	Little Mountain Bullhog	285,768	1,026
2930	East Tintic Bullhog Phase 3	319,446	1,071
2933	East Tintic Bullhog Phase 4	280,760	855
2951	Diamond Rim Mastication	174,424	624
2900	West Grouse Creek Bullhog Phase 3	318,537	950
2874	Park Valley PJ Treatment Project Phase 1	451,749	1,445
2965	Range Creek Fuels Reduction and Vegetation Restoration Project Phase-1	279,617	195
2881	Ford Ridge Fuels Reduction and Vegetation Restoration Project Phase-1	414,152	135
2923	Westwater Canyon Project Phase 3- Colorado River	79,705	<u>22</u>
2879	Lower San Rafael River and Riparian Corridor Restoration BLM Land Phase 1	262,235	<u>363</u>
2956	FY15 Southeast Utah Riparian Restoration Phase 2	125,000	<u>470</u>
2861	Cedar Mountain Hazardous Fuels Reduction and Vegetation Restoration Project Phase-1	590,027	1,017
2942	Upper Kanab Creek Bald Knoll Phase 3	585,495	1,229
2984	South Canyon (Rock Canyon)	1,031,000	1,971
2982	Yellowjacket (Cave Lake)	1,050,000	1,776
3039	South Beaver Buckskin Valley	357,870	1,320
	Totals	6,605,785	14,469